

Biodiversity of the Southern Ocean: a catalogue of the Antarctic and sub-Antarctic Caprellidae and Cyamidae (Crustacea: Amphipoda) with distribution and ecological data

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Abstract

An up-to-date catalogue of two families of Antarctic and sub-Antarctic Caprellidea (Crustacea: Amphipoda) is established including 23 species of Caprellidae (plus two unidentified species) and 7 species of Cyamidae ectoparasites on Cetacea. Exhaustive or extensive list of bibliographical references with synonymy, detailed information on geographic and bathymetric distribution (with maps), ecological data and remarks on taxonomic and biogeographical status are provided for each species. The catalogue is based on taxonomic and ecological literature checked until 31 December 2003. Additional unpublished records of species from the Antarctic and sub-Antarctic collections held at the Royal Belgian Institute of Natural Sciences have been included.

The taxonomic status of all the Southern Ocean species has been checked and the identification of specimens attributed to *Caprellina* spp aff *longicollis*, *Mayerella magellanica*, *Paraproto* sp., *Caprella equilibra*, *C. penantis*, as well as to *Caprellinoides* need further clarification or confirmation.

Most of the caprellids found in the Southern Ocean have a wide bathymetric distribution. The highest species richness was found between 0 and 200 meters deep in the sub-Antarctic and between 35 and 500 meters deep in the Antarctic. Of 23 species of benthic Caprellida, 14 can be considered endemic to the Southern Ocean (*s.l.*), 6 endemic to the sub-Antarctic region and 3 endemic to the Antarctic region. Endemicity at genus level attains 43.7 % for the whole Southern Ocean, and 14.3 % for each of the Antarctic and sub-Antarctic regions.

Habitat use, feeding strategies and clinging behaviour remain unknown for most of the benthic caprellid species from the Southern Ocean and future studies are needed to fill this gap.

Keywords: Amphipoda, Antarctic, Sub-Antarctic, faunistics, taxonomy, distribution, biogeography, biodiversity.

Résumé

Un catalogue des espèces antarctiques et subantarctiques de deux familles de Caprellidea (Crustacea: Amphipoda) est établi, comprenant 23 espèces de Caprellidae (plus 2 espèces non identifiées) et 7 espèces de Cyamidae, ectoparasites de cétacés. Une liste exhaustive ou extensive de références bibliographiques avec synonymie, une information détaillée sur la distribution géographique et bathymé-

trique (avec cartes), des données écologiques et des remarques sur le statut taxonomique et biogéographique sont présentées pour chaque espèce. Le catalogue est basé sur la littérature taxonomique et écologique dépouillée jusqu'au 31 décembre 2003. En outre des données nouvelles provenant des collections antarctiques et subantarctiques de l'Institut royal des Sciences naturelles de Belgique sont incluses.

Le statut taxonomique de toutes les espèces de caprellidés de l'océan Austral a été revu et l'identification des spécimens attribués à *Caprellina* spp aff *longicollis*, *Mayerella magellanica*, *Paraproto* sp., *Caprella equilibra*, *C. penantis*, ainsi qu'à *Caprellinoides* demande clarification ou confirmation.

La plupart des caprellidés de l'océan Austral présentent une distribution bathymétrique étendue. La plus grande richesse en espèces se situe entre 0 et 200m dans la région subantarctique et entre 35 et 500 m dans la région antarctique. Sur les 23 espèces de caprellidés benthiques, 14 sont endémiques de l'océan Austral (*s.l.*), 6 sont endémiques de la région subantarctique et 3 de la région antarctique. Le taux d'endémisme au niveau générique atteint 43.7 % pour l'ensemble de l'océan Austral et 14.3 % pour chacune des régions antarctique et subantarctique.

L'habitat, les stratégies alimentaires et le comportement de fixation restent encore inconnus chez la plupart des caprellidés benthiques de l'océan Austral.

Mots-clés : Amphipoda, Antarctique, Subantarctique, faunistique, taxonomie, distribution, biogéographie, biodiversité.

Introduction

The accurate assessment of the Antarctic marine biodiversity, the understanding of its ecofunctional role and the requirements for its conservation are recognized current priorities in the context of global environmental change and accelerating loss of biodiversity (SCAR 1994, ARNTZ et al. 1997, DE BROYER et al. 2003). Fauna and flora inventories, taxonomy and classification, processes driving the origin, maintenance and change of biodiversity, role of biodiversity in ecosystem functioning, conservation, restoration, sustainable use and monitoring of biodiversity are today world-wide priorities for biodiversity research (see e.g. LOREAU & OLIVIERI 1999).

Accurate species identification is fundamental in biodiversity studies and relies on efficient identification tools, which are still lacking in some highly diverse and taxonomically difficult groups of the Southern Ocean, such as amphipods, polychaetes or copepods.

Amphipod crustaceans appear to be one of the most speciose animal groups in the Antarctic and may be also in the sub-Antarctic waters. In the whole Southern Ocean they count among the most diversified groups in terms of life styles, trophic types, habitats and size spectra (DE BROYER & JAZDZEWSKI 1996, DAUBY *et al.* 2001, DE BROYER *et al.* 2001a, DE BROYER *et al.* in press). On the other hand, amphipods offer a significant trophic resource to a number of Antarctic and sub-Antarctic predators such as fishes, invertebrates, seabirds and mammals (DAUBY *et al.* 2003).

In the framework of the "Ant'Phipoda" project (DE BROYER *et al.* 2001b), an international network of specialists (the "Antarctic Amphipodologist Network") was established to undertake the taxonomic revision of the Antarctic fauna of gammaridean and corophiidean amphipods (about 550 spp), to synthesize their biogeographical and ecological traits and to elaborate the highly-needed identification guides as well as an expert system for identification of the Antarctic amphipods.

In the course of this on-going project, a "Biodiversity Reference Centre" for Antarctic Amphipoda was set up at IRScNB in Brussels. This reference centre comprises on one hand a comprehensive database on taxonomy, distribution, ecology and biology of Southern Ocean species and on the other hand extensive reference collections and specialized documentation. A checklist of the Amphipoda of the Southern Ocean, including the Caprellidea, was compiled by DE BROYER & JAZDZEWSKI (1993). Since this publication several new caprellid species and new records have been reported by GUTT *et al.* (2000); GUERRA-GARCÍA (2001c, 2003a, b, c); GUERRA-GARCÍA & COLEMAN (2001); GUERRA-GARCÍA & TAKEUCHI (2004). Consequently, we present here an updated catalogue with all caprellid species reported so far in the Antarctic and sub-Antarctic waters. The catalogue includes a list of references for each species, detailed information on bathymetric and geographical distribution (with maps), ecological data, remarks on taxonomic status and distribution of selected species, and an extensive bibliography.

STUDIES ON ANTARCTIC AND SUB-ANTARCTIC CAPRELLIDAE AND CYAMIDAE

The benthic caprellid amphipods of the Antarctic and sub-Antarctic waters were primarily studied by STEBBING (1883, 1888), PFEFFER (1888), MAYER (1903), and later by SCHELLENBERG (1926b, 1931), K.H. BARNARD (1930, 1931a, 1932) and ARIMOTO (1970). MCCAIN & GRAY (1971) reviewed the taxonomy of the Antarctic and sub-Antarctic Caprellidae listing 21 species in 11 genera. Subsequent papers by MCCAIN (1972), VASSILENKO (1972), THURSTON (1974a, 1974b), LAUBITZ (1992), TAKEUCHI & TAKEDA (1992) and GUERRA-GARCÍA & COLEMAN (2001) have recorded caprellids from this region. DE BROYER & JAZDZEWSKI (1993) listed all references of records of Antarctic and sub-Antarctic caprellidean Amphipoda. GUERRA-

GARCÍA (2001c) reviewed the genus *Caprellinoides* describing the new species *Caprellinoides singularis*. GUERRA-GARCÍA & COLEMAN (2001) studied the material collected during the "Polarstern" cruise ANT XIV/2 and illustrated five species in four genera, redescribing *Pseudododecas bowmani* and *Paraproteo cf condylata*. GUERRA-GARCÍA (2002a, 2003c) tentatively redescribed *Caprellina longicollis* and *Mayerella magellanica* based on the material collected from Chile and the same author transferred *Luconacia incerta* to *Deutella* after revising this genus (GUERRA-GARCÍA 2003b). Recently, a new genus, *Caprellaporema*, and two new species, *Caprellaporema subantarctica* and *Pseudaeiginella campbellensis* were described on the basis of collections from the sub-Antarctic islands of New Zealand and Australia (GUERRA-GARCÍA 2003a).

The first Southern Ocean Cyamidae, permanent ectoparasites on Cetacea, were described by ROUSSEL DE VAUZÈME (1834) from the surroundings of Tristan da Cunha and the Falkland Islands. The Antarctic cyamids in particular were treated by K.H. BARNARD (1932), STEPHENSEN (1947a), GRUNER & VLAZOVA (1982) who gave an overview of the Antarctic fauna, AVDEEV (1989) and DAILEY & VOGELBEIN (1991). Recently, ALONSO DE PINA & GIUFFRÀ (2003) redescribed four *Cyamus* species from Antarctic and Argentinian material. GRUNER (1975) catalogued the world fauna of Cyamidae, recording 23 species at that time, versus 25 species today.

Material and methods

SOURCES AND CITATIONS

The catalogue is based on taxonomic and ecological literature checked until 31 December 2003. Dates of publication assorted with a, b, c, ..., followed the order registered in the "Ant'Phipoda" bibliographic database (DE BROYER *et al.* 2001b).

Additional records of some species recently identified from the Antarctic and sub-Antarctic collections of the Ant'Phipoda reference centre at the Royal Belgian Institute of Natural Sciences (GUERRA-GARCÍA & DE BROYER unpublished data) have been incorporated in the catalogue. Taxonomic references are complete, except for species with cosmopolitan or extensive distribution outside the Southern Ocean, which citations are restricted to Southern Ocean records and some additional selected references (usually with comprehensive illustration and/or re-descriptions). For these latter species of Caprellidae, complete literature and synonymy till 1968 can be found in MCCAIN & STEINBERG (1970) or in more recent selected references cited. For Cyamidae see GRUNER (1975), MARTIN & HEYNING (1999) and MARGOLIS *et al.* (2000).

In the Cyamidae section, only species presently recorded in the Southern Ocean have been listed, but additional species may occur in the area, according to the presence of their cetacean hosts in Antarctic and sub-Antarctic waters. The Cyamidae potentially found in the Southern Ocean are: *Neocyamus physzeris* (POUCHET, 1888) recorded on *Physeter catodon* Linnaeus, 1758 along the Chilean coast at

36°S (BUZETA, 1963); *Platycyamus thompsoni* (GOSSE, 1855) recorded from *Hyperoodon planifrons* Flower, 1882 in the southern hemisphere (GRUNER & VLASOVA, 1982) and from *Mesoplodon grayi* Von Haast, 1876 in South Australia (SEDLAK-WEINSTEIN, 1991); possibly also *Isocyamus delphinii* Guérin-Méneville, 1837, found on *Orcinus orca* (LINNAEUS, 1758) in the northern hemisphere and on *Globicephala melas* (TRAILL, 1809) in cold temperate waters of both hemispheres (SEDLAK-WEINSTEIN 1991; MARTIN & HEYNING 1999), and *Orcinocyamus orcini* (LEUNG, 1970) recorded from *Orcinus orca* so far only in the northern hemisphere (MARTIN & HEYNING, 1999).

Hosts distribution data are based on EVANS (1987), MEAD & BROWNELL (1993) and SHIRIHAI (2002). Taxonomy of the cetacean host species relies on MEAD & BROWNELL (1993).

GEOGRAPHIC SCOPE

All species recorded in the Southern Ocean have been included. Southern Ocean is taken here in its wide sense (DEACON 1982, 1984, MC GINNIS 1982, DE BROYER & JAZDZEWSKI 1993) including all waters south of the Subtropical Front Zone (or Subtropical Convergence) to the coasts of the Antarctic continent.

This vast marine area has been classically divided in two biogeographical regions, primarily based of the benthos distribution (HEDGPETH 1969, 1970, DELL 1972, KNOX & LOWRY 1977, WHITE 1984, DE BROYER & JAZDZEWSKI 1993) (Fig. 1):

- The Antarctic Region, which extends from the coasts of the continent northwards to the Antarctic Polar Front, and comprises two sub-regions or provinces: the East and West Antarctic provinces, the latter including the South Georgia district.

- The sub-Antarctic Region, comprising the sub-Antarctic Islands province (with the Tristan da Cunha district) and the Magellan province. The sub-Antarctic Islands province is entirely under the West Wind Drift influence and comprises different groups of islands distributed around the Antarctic continent in the marine zone between the Antarctic Polar Front and the Subtropical Front Zone. It includes the New Zealand sub-Antarctic islands, *i.e.* Auckland, Campbell, Antipodes, Bounty and Snares Islands (KNOX 1975, 1987, LOWRY & FENWICK 1983), Macquarie, Kerguelen, Heard and McDonald, Crozet, Prince Edward and Marion Islands as well as Tristan de Cunha and Gough Islands considered a separate district (HEDGPETH 1969, 1970).

The Magellan province comprises the seas around the southern tip of South America and includes the large Patagonian continental shelf, the Falkland Islands (= Islas Malvinas) and the Burdwood Bank. The northern limits chosen for this inventory are for the Chilean coast the latitude of Cabo de Quedal, north of Isla Chiloe (41°S) and for the Argentinian side the latitude of Peninsula Valdes (42°S). These limits rely on hydrographical and biological boundaries (see BALECH 1954; SEMENOV & BERMAN 1977; SEMENOV 1978; LOPEZ GAPPA & LICHTSCHEIN 1988; BOLTOVSKOY *et al.* 1999). However, LANCELLOTTI & VASQUEZ (1999, 2000) pointed out that the presence of a biogeographical break near 41°S along the Chilean coast as broadly suggested in the lit-

erature, have been only seen for Echinodermata and Demospongia. Other groups, like Crustacea, indicated the existence of a transitional region (between 35° and 48°S) for the littoral and shallow sublittoral fauna, showing gradual replacement of species.

On the Atlantic sector, the faunistic limits between the warmer northern Argentine province and the cooler austral Magellan province fluctuates between 41° and 44°S as a result of the variable influence of the subtropical waters of the southward Brazilian Current and the northward Patagonian Current (e.g. ALONSO DE PINA 1997). The latitude of Peninsula Valdes (42°S) used here may appear only a coastal biogeographical limit. Analysing the distribution of the mollusc, bryozoan and echinoderm assemblages from the Argentine continental shelf at depths below 50 m BASTIDA *et al.* (1992) distinguished two zoogeographic areas within the Magellan province, both extending roughly parallel to the coast from the tip of Tierra del Fuego (at about 55°S) to the latitude of 37°S or 39°S respectively. The inner shelf area (at depths of 50 to 160 m) is influenced by the Patagonian Current and its bottom water temperature ranges from 4.5° to 13°C. The outer shelf area (at 80 to 200 m depth) which includes the Falkland archipelago is influenced by the Malvinas Current and bottom temperature ranges from 4.5° to 7.5°C. These results suggested the possibility of a subdivision of the Atlantic sector of the Magellan province into two districts: the Patagonian district would occupy the warmer inner shelf while the Malvinean district would extend over the deeper and colder outer shelf.

SYSTEMATICS

Taking into account that the phylogeny and higher classification of Caprellidea is still under debate, the genera were grouped in a first step considering the smallest number of families (Phtisicidae, Caprellidae, Cyamidae), following TAKEUCHI (1993b). LAUBITZ (1993) followed another approach considering a higher number of families (Paracercopidae, Phtisicidae, Caprellinoidea, Cyamidae, Caprogammaridae, Caprellidae, Parambidae, Protellidae). GUERRA-GARCÍA (2002g) found some inconsistencies in LAUBITZ's classification, especially in the differences between the families Protellidae MCCAIN, 1970 and Pariambidae LAUBITZ, 1993, and reported a number of examples which support the combination of families.

Recently, MYERS & LOWRY (2003) revised on a cladistic basis the corophioid amphipods and erected for the group the sub-order Corophiidea. They divided the corophiideans into two infraorders, the Corophiida and the Caprellida, based on a hypothesis of the evolution of different feeding strategies. In their new classification, the superfamily Caprelloidea contains five families: Caprellidae, Caprogammaridae, Cyamidae, Dulichiidae and Podoceridae. The Caprellidae in turn is subdivided in three subfamilies: Caprellinae, Paracercopinae and Phtisicinae. We have provisionally adopted this classification for the purpose of this catalogue. For the family Cyamidae, the generic classification follows MARGOLIS *et al.* (2000), but subgeneric taxa have not been used here as they remain to be better substantiated (Todd Haney pers. com.).

DISTRIBUTION RECORDS AND MAPPING

For mapping purposes, when geographic coordinates are lacking in the published locality record, coordinates have been extracted from appropriate gazetteers and are cited between square brackets. The geographic information sources were: Delépine 1973, SCAR ENEA Composite Gazetteer of Antarctica (www.pnra.it/SCAR_GAZE), USGS Geographic Names Information System – Antarctica (<http://geonames.usgs.gov/antform.html>). Quadrant names used for the Atlantic, Indian and Pacific sectors of the open ocean refer to BARNARD & KARAMAN (1991) as modified by DE BROYER & JAZDZEWSKI (1993).

As far as possible details on bottom types of sampling stations and collecting gears are given.

In the Cyamidae section cetacean hosts are listed. For cosmopolitan cetacean species the hemisphere, where infected hosts have been recorded, is underlined.

Maps have been generated from the database by use of a dynamic link and ArcScript (ArcView GIS 3.0a).

TYPE MATERIAL LOCATION

The first cited museum location is the holotype specimen depository. Following locations are paratype(s) depositories. "Not found" indicates an unsuccessful attempt in recent years by some of the co-authors or by museum authorities to locate the type specimen(s).

ABBREVIATIONS

(syn): synonymy (indicates, for cosmopolitan species or species widely distributed outside the Southern Ocean, the reference(s) where to find full citations and synonymy).

(new syn.): new synonymy or new combination.

(eco): ecology (indicates marine ecology papers mentioning species records).

The following abbreviations have been used for author names:

AS: A. SCHELLENBERG ; **Be&V:** A.A. GRUNER & L.P. VLAZOVA; **CDB:** C. DE BROYER; **CLG:** C.L. GRIFFITHS; **COC:** C.O. COLEMAN; **D&V:** M.D. DAILEY & W.K. VOGELBEIN; **DRL:** D.R. LAUBITZ; **EC:** E. CHEVREUX; **ESW:** E. SEDLAK-WEINSTEIN; **GG&C:** J.M. GUERRA-GARCIA & C.O. COLEMAN; **GG&T:** J.M. GUERRA-GARCIA & I. TAKEUCHI; **GP:** G. PFEFFER ; **HEG:** H.E. GRUNER ; **IA:** I. ARIMOTO; **JG:** J. GUTT ; **JGG:** J.M. GUERRA-GARCIA; **JMC:** J.C. MCCAIN; **KHB:** K.H. BARNARD; **KS:** K. STEPHENSEN ; **LM:** L. MARGOLIS; **MC&G:** J.C. MCCAIN & W.S. GRAY JR ; **MC&S:** J.C. MCCAIN & J.E. STEINBERG; **MHT:** M.H. THURSTON; **MLB:** M.L. BRANCH; **MR:** M. RAUSCHERT ; **PM:** P. MAYER ; **RB:** R. BUZETA; **Re&H:** X. REN & L. HUANG; **SVV:** S.V. VASSILENKO; **T&T:** I. TAKEUCHI & M. TAKEDA; **T&W:** I. TAKEUCHI & K. WATANABE; **TRS:** T.R.R. STEBBING; **TTT:** I. TAKEUCHI, M. TAKEDA & K. TAKESHITA; **VVA:** V.V. AVDEEV; **WAH:** W.A. HASWELL; **WM:** W. MACNAE.

Abbreviations used for museums are listed in Table 1.

Table 1. Abbreviations for museum denominations.

AM, Sydney	Australian Museum, Sydney, Australia.
AMNH, New York	American Museum of Natural History, New York, USA.
Canterbury Mus.	Canterbury Museum, University of Canterbury, Christchurch, New Zealand.
CMN, Ottawa	Canadian Museum of Nature, National Museums of Canada, Ottawa, Canada.
MNHN, Paris	Muséum National d'Histoire Naturelle, Paris, France.
MNHN, Santiago	Museo Nacional de Historia Natural, Santiago de Chile, Chile.
MUG, Moscow	Moscow State University, Moscow, Russia.
NAS, Philadelphia	Museum of the National Academy of Sciences, Philadelphia, USA.
NHM, London	The Natural History Museum, London, UK. <i>Also:</i> British Museum (Natural History), London, UK.
SMNH, Stockholm	Swedish Museum of Natural History, Stockholm, Sweden.
USNM, Washington	National Museum of Natural History, Smithsonian Institution, Washington DC, USA.
ZMB, Berlin	Zoologisches Museum Berlin. <i>Also:</i> Museum für Naturkunde, Humboldt-Universität, Berlin, Germany.
ZMH, Hamburg	Zoologisches Museum, Hamburg Universität, Germany.
ZMUC, Copenhagen	Zoological Museum, University of Copenhagen, Copenhagen, Denmark.

ZOOGEOGRAPHIC AND BATHYMETRIC CODES

For each species listed, the following geographic and bathymetric codes have been used for summarizing the distribution:

E for East Antarctic province, **W** for West Antarctic province, **G** for the South Georgia district (within the West Antarctic province), **S** for sub-Antarctic Islands province, **T** for Tristan da Cunha district (within the sub-Antarctic Islands province), **M** for Magellan province, **S.Oc.** for Southern Ocean (*s.l.*).

Deep sea species (*i.e.* occurring deeper than 500 m in the Antarctic region or deeper than 200 m in the sub-Antarctic region, see below) have been included in the appropriate biogeographic provinces.

+: means that the species is also distributed outside the Antarctic and/or sub-Antarctic region(s) or north to 45°S in the case of cyamids.

++: indicates the species is cosmopolitan or at least widely distributed in two other oceans.

Ba: bathyal (200-2000 m in the sub-Antarctic region or 500-2000 m in the Antarctic region).

Ab: abyssal (occurring below 2000 m).

The mention **Ba+** or **Ab+** is used when a species also occurs above the upper limits of the bathymetric zone.

For **cyamids** (ectoparasites on whales), the northern limit chosen for this checklist is the latitude of 45°S and the following geographic codes have been used: **An**: for record(s) in the Antarctic region, **Sa**: for record(s) in the sub-Antarctic region.

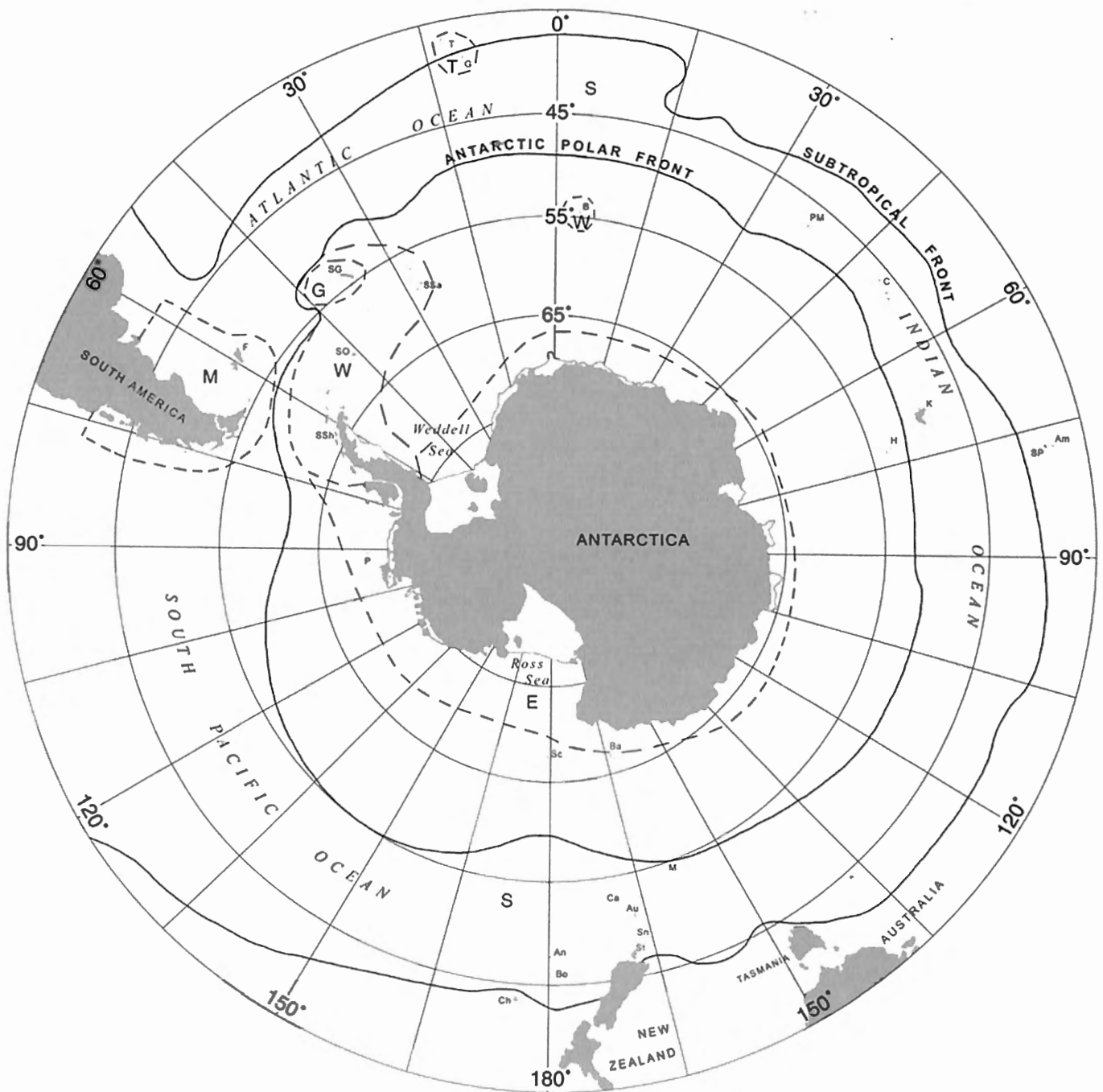


Fig. 1. Zoogeographical zonation of the Southern Ocean (slightly modified from Hedgpeth, 1969; location of front zones according to Deacon, 1982). Dotted line limits are indicative: see text.

Legend: Am: Amsterdam I.; An: Antipodes Is.; Au: Auckland Is.; B: Bouvet I.; Ba: Balleny Is.; Bo: Bounty I.; C: Crozet Is.; Ca: Campbell I.; F: Falkland Is.; G: Gough I.; H: Heard & McDonald Is.; K: Kerguelen Is.; P: Peter I I.; PM: Prince Edward and Marion Is.; M: Macquarie I.; Sc: Scott I.; SG: South Georgia; SO: South Orkney Is.; Sn: Snares Is.; SP: St Paul I.; SSh: South Shetland Is.; T: Tristan da Cunha I. For E, W, G, S, T, M, see text.

CATALOGUE

Infraorder CAPRELLIDA LEACH, 1814
Superfamily CAPRELLOIDEA LEACH, 1814
Family CAPRELLIDAE LEACH, 1814
Subfamily Caprellinae LEACH, 1814

***Caprella equilibra* SAY, 1818**
 (Fig. 2)

SAY, 1818: 391-392.

HELLER, 1866: 54, figs. 17-19. (*Caprella monacantha*).

MAYER, 1882: 45, pl. 1: fig. 7, pl. 2: figs. 1-11, pl. 4: figs. 20-25, pl. 5: figs. 16-18. (*Caprella aequilibra*).

CHEVREUX & FAGE, 1925: 455, fig. 433. (*Caprella aequilibra*).

SCHELLENBERG, 1926b: 470.

MCCAIN, 1968: 26-30, figs. 12-13, 55.

MCCAIN & STEINBERG, 1970: 19-21 (syn).

MCCAIN & GRAY, 1971: 113-114, fig. 3.

MCCAIN, 1979: 471.

KRAPP-SCHICKEL, 1993: 782-783, fig. 533.

DE BROYER & RAUSCHERT, 1999: 287.

GUERRA-GARCÍA & THIEL, 2001: 878-879.

GUERRA-GARCÍA, 2003a: 181-182, fig. 4.

GUERRA-GARCÍA & TAKEUCHI, 2004: 1013, fig. 34.

Distribution: S + M ++

Auckland Islands: Port Ross, south east side of Ocean Island, 50°32'S 166°16'E, 0-3 m (bottom: algae from rocks) (JGG 03a).

Campbell Island: Perseverance Harbour, caves east of Divers Point, 52°34'S 169°11'E, 3 m (bottom: sponges, hydroids, tunicates, red algae and spider crab from cave wall); west side of Southeast Harbour, 52°36'S 169°09'E, 2 m (bottom: barnacles, tunicates, sponges, sea stars and sediment beneath boulder overhang) (JGG 03a).

Magellan Area: *Vema 16*, sta. 40, 42°48'S 063°11'W, 70 m; *Vema 17*, sta. 12, 43°30'S 074°55'W, 112 m (MC&G 71).

Type-locality:

USA: South Carolina (MC&S 70).

Depth range:

0-112 m.

Extrinsic distribution:

Cosmopolitan.

Extrinsic depth range:

0-3000 m (AS 26b).

Ecology:

Habitat: collected from hard bottoms with algae, sponges, hydroids, tunicates, sea stars, and barnacles and from sediment beneath boulder overhang.

Type material location:

? NAS, Philadelphia (MC&S 70).

Remarks:

Caprella equilibra is an almost cosmopolitan species and its occurrence in the South Atlantic and South Pacific has been

previously recorded by MCCAIN & GRAY (1971). *Caprella equilibra* is very similar to the sub-Antarctic *Caprella manningi*, mainly by the presence of a ventral projection between the gnathopods 2. Therefore, a careful examination of the sub-Antarctic material of *C. equilibra* should be conducted to confirm the presence of the species in the Southern Ocean.

***Caprella manningi* MCCAIN, 1979**
 (Fig. 3)

MCCAIN, 1979: 471-473, fig. 1.

GUERRA-GARCÍA, 2003a: 182-184, figs. 5-8.

Distribution:

S

Antipodes Islands: sta. AM8-29c, 49°40'S 178°50'30"E, Reef Point (bottom: in large, deep intertidal pool, associated with the asteroid *Calvasterias suteri*) (JMC 79).

Snares Islands: Ho Ho Islet, 48°07'S 166°36'E, 0 m (bottom: intertidal pools, from sponges and algae) (JGG 03a).

Type-locality:

Antipodes Islands: sta. AM8-29c, 49°40'S 178°50'30"E, Reef Point (bottom: in large, deep intertidal pool, associated with the asteroid *Calvasterias suteri*) (JMC 79).

Depth range:

0 m.

Ecology:

MCCAIN (1979) suggested that the convex palm of the propodus and the short, massive dactylus of the pereopods probably are adaptations to live with the asteroid *Calvasterias*. GUERRA-GARCÍA (2003a) redescribed the species and illustrated a sub-adult male and a premature female collected from sponges and algae. This indicates that *C. manningi* could not be an obligate commensal of asteroids.

Type material location:

Canterbury Mus.: not found (JGG).

Remarks:

See remarks under *C. equilibra*.

***Caprella penantis* LEACH, 1814**
 (Fig. 4)

LEACH, 1814: 404.

SCHELLENBERG, 1931a: 266, 272.

BARNARD K.H., 1932: 300. (*Caprella acutifrons*).

STEPHENSEN, 1949: 53-54. (*Caprella acutifrons* var. *natalensis*).

MACNAE, 1953: 1032. (*Caprella acutifrons*).

BARNARD K.H., 1965: 209. (*Caprella acutifrons*).

MCCAIN, 1968: 33-40, figs. 15, 16, 51.

MCCAIN & STEINBERG, 1970: 33-36. (syn).

MCCAIN & GRAY, 1971: 114-115, fig. 3.

LAUBITZ, 1972: 41, pls. 9-10.

KRAPP-SCHICKEL, 1993: 791, fig. 539.

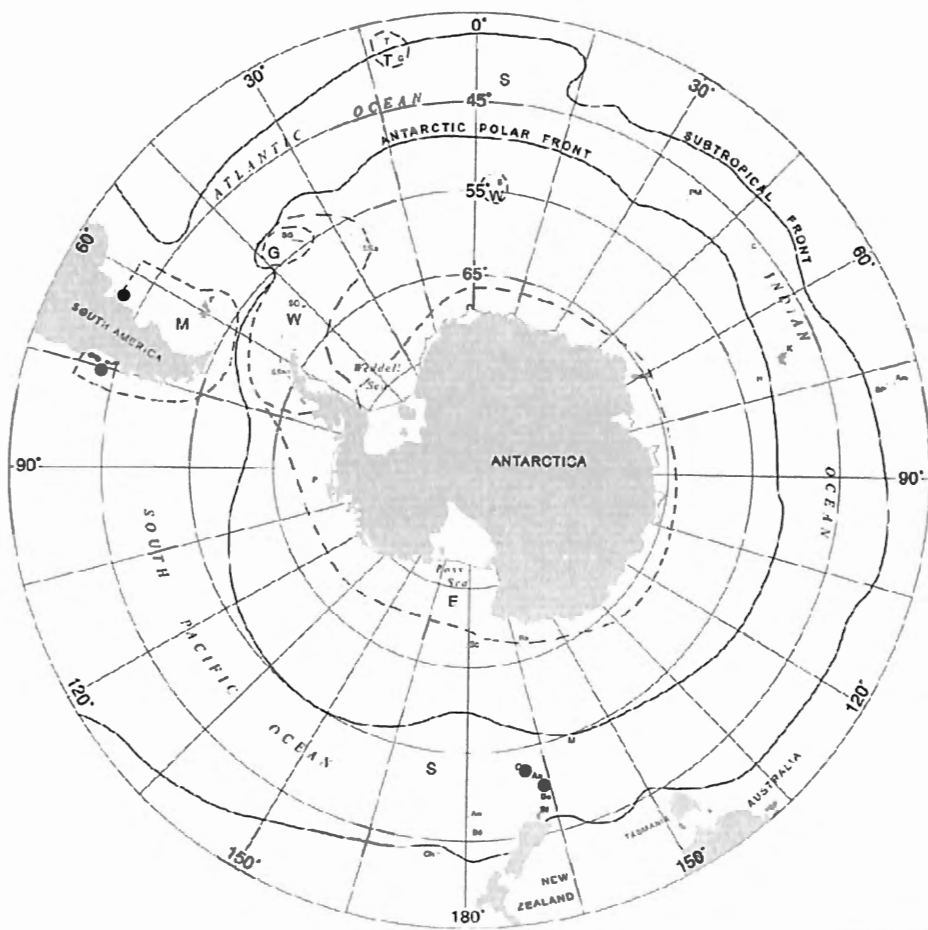
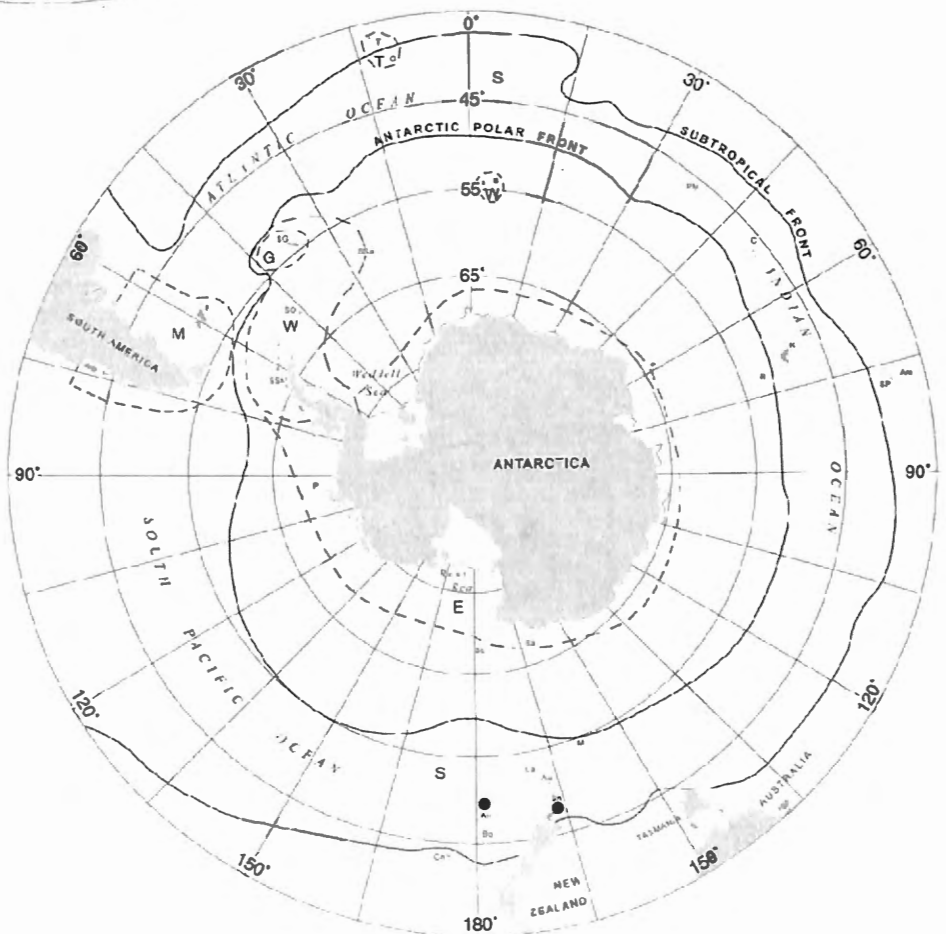


Fig. 2.
Distribution of *Caprella equilibra*
(records north to Subtropical Front
not shown).

Fig. 3.
Distribution of *Caprella manningi*.



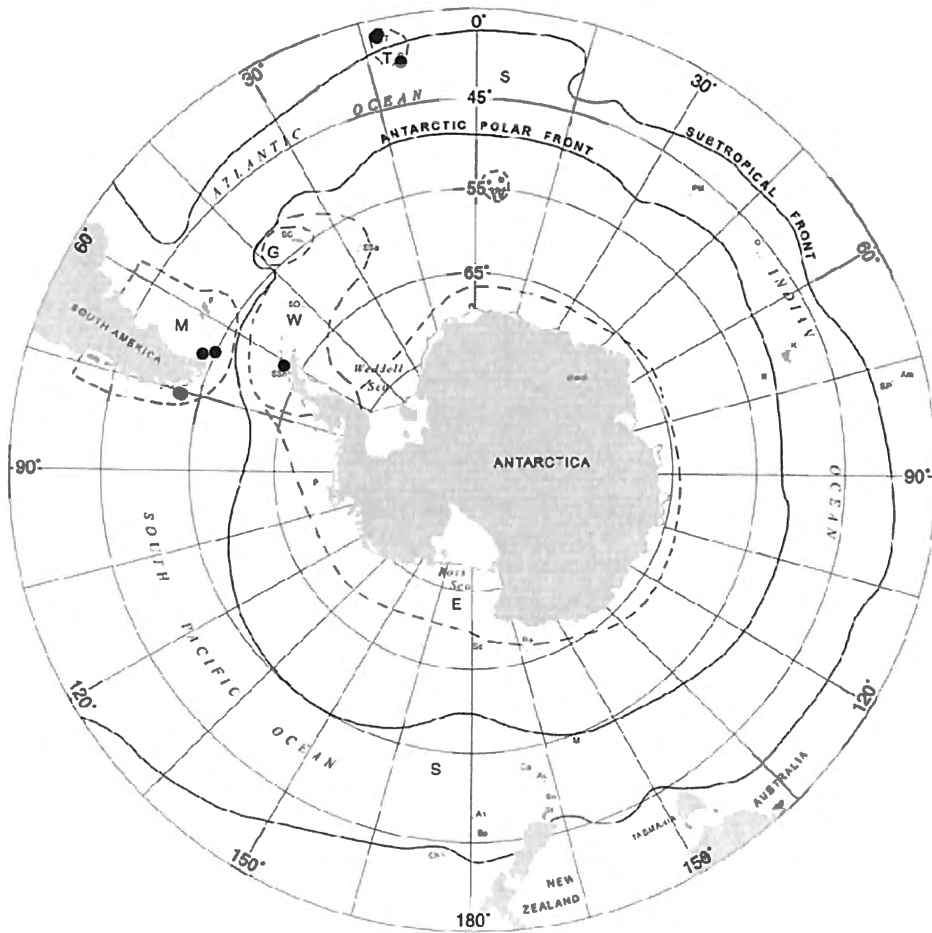


Fig. 4.
Distribution of *Caprella penantis*
(records north to Subtropical Front
not shown).

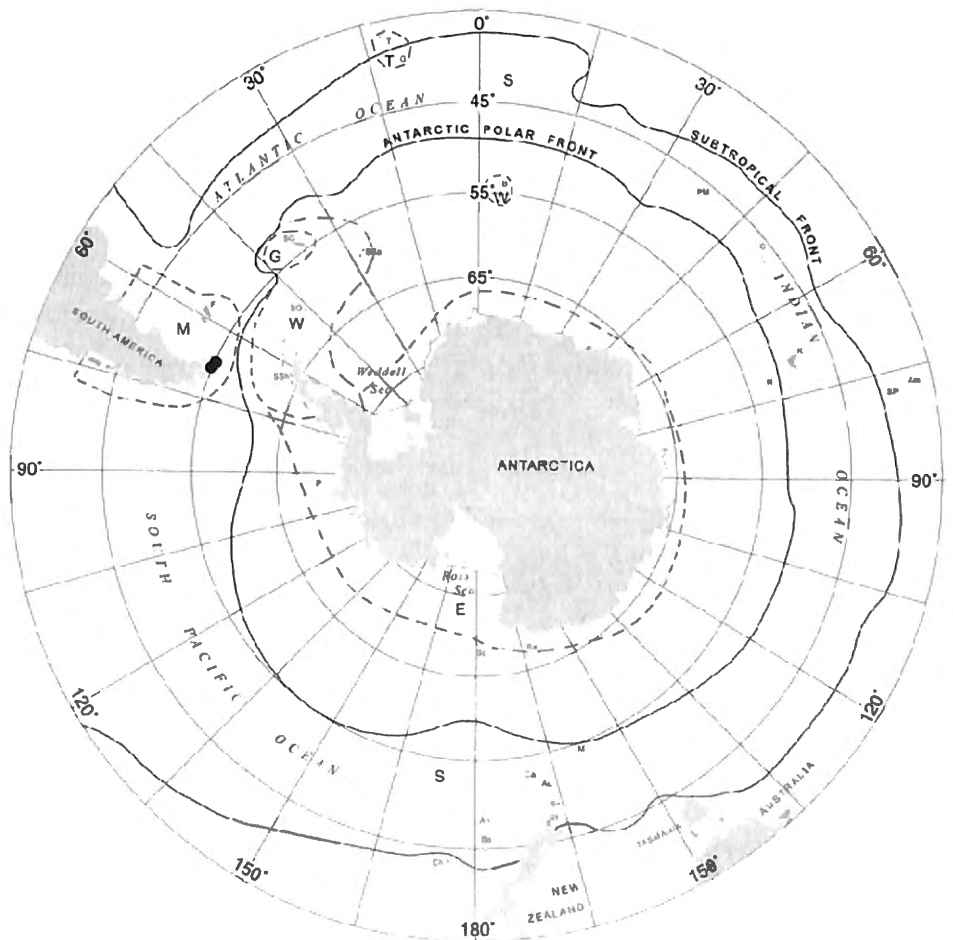


Fig. 5.
Distribution of *Caprella unguina*.

DE BROYER & RAUSCHERT, 1999: 287.

GUERRA-GARCÍA & TAKEUCHI, 2004: 1013-1016, fig. 35.

Distribution: M + T ++ (Ba+)

Falkland Islands: Port William, [51°41'S 057°48'W], 22-40 m (bottom: sand, small stones, algae) (AS 31a).

Gough Island: no loc., [40°19'S 009°57'W], from kelp (KHB 65).

Magellan Area: *Eltanin 11*, sta. 958, 52°56'S 075°00'W, 92-101 m; sta. 960, 52°40'S 074°58'W, 64 m; sta. 966, 53°40'S 066°20'W, 81 m; sta. 967, 53°42'S 066°19'W, 81 m; sta. 969, 54°56'S 065°03'W, 229-265 m (MC&G 71).

Tristan da Cunha: *Discovery*, sta. 4, Tristan da Cunha Island, [37°05'S 012°15'W], 40-46 m (gear: large dredge) (KHB 32); Tristan da Cunha Island, [37°05'S 012°15'W], 0 m, between tide marks on the shore (bottom: among sponges) (WM 53); *Norwegian Scientific Expedition*, Tristan da Cunha Island, [37°05'S 012°15'W], 0-45 m; Nightingale Island, [37°25'S 012°29'W], 7-60 m; Inaccessible Island, [37°17'S 012°41'W], 0-40 m (KS 49).

Type-locality:

England: Devonshire coast (LEACH 1814).

Depth range:

0-265 m.

Extrinsic distribution:

Cosmopolitan.

Extrinsic depth range:

?

Ecology:

Habitat: collected from algae and sponges in the Southern Ocean. *C. penantis* is quite non specific in its habitat preference and has been taken on various red and brown algae, sea grass, sponges, hydroids, alcyonarians, zoantharians, bryozoans and echinoids (MCCAIN 1968).

Type material location:

?

Remarks:

Caprella penantis has been recorded under several species or subspecies names from different temperate regions of the world and further studies are needed to resolve its nomenclatural status at each locality (TAKEUCHI 1995).

Caprella unguina MAYER, 1903

(Fig. 5)

MAYER, 1903: 127, pl. 5: fig. 36; pl. 8: figs. 30-31.

SHELLENBERG, 1931a: 266, 272.

MCCAIN, 1966: 92.

MCCAIN & STEINBERG, 1970: 44 (syn).

MCCAIN & GRAY, 1971: 115, fig. 3.

VASSILENKO, 1974: 156-158, figs. 82-83.

TAKEUCHI *et al.*, 1989: 19-28, figs. 1-4.

DE BROYER & RAUSCHERT, 1999: 287.

Distribution:

M ++

Magellan Area: *Eugenie Expedition 1852*, Isla de los Estados, Bahia York, [76°49'S 60°57'E], 7-11 m (PM 03); Tierra del Fuego, Puerto Pantalón [54°54'S 067°56'W] (bottom: kelp) (AS 31a); Off Tierra del Fuego, *Vema* 17, sta. 47, 55°07.2'S 066°29.3'W, 71 m (MC&G 71).

Type-localities:

Magellan Area: *Eugenie Expedition 1852*, Isla de los Estados, Bahia York, [76°49'S 60°57'E], 7-11 m (PM 03). Pacific Ocean: Galapagos, *Eugenie Expedition 1852* (PM 03); Off British Columbia, *U.S. Fish. Comm. Alaska Cruise 1888*, 51°23'N 130°34'W, 1602 m (PM 03).

Depth range:

7-71 m.

Extrinsic distribution:

Pacific Ocean; South West Atlantic Ocean; cosmopolitan? (TTT 89).

Extrinsic depth range:

7-1602 m (MC&S 70).

Ecology:

Habitat: the striking morphology of the pereopods is related to the habitat of this species, which has been found living associated to the mouthparts of the lithodid crabs *Lithodes aequispina*, *Neolithodes asperrimus* and *Paralomis multispinosa* (TAKEUCHI *et al.*, 1989) and *Paralomis granulosa* (M. THIEL, pers. com.).

Type material location:

SMNH, Stockholm. USNM, Washington.

Remarks:

A complete redescription of *Caprellina unguina* was given by TAKEUCHI *et al.* (1989) on the basis of specimens collected from several localities in the North Pacific.

Caprella sp. MCCAIN & GRAY, 1971

MCCAIN & GRAY, 1971: 115-116.

DE BROYER & RAUSCHERT, 1999: 287.

Distribution:

M (Ab+)

Magellan Area: *Vema 17*, sta. 13, 46°59.5'S 075°54'W, 2657 m; *Eltanin 11*, sta. 959, 52°55'S 075°00'W, 92-101 m (MC&G 71).

Type-locality:

Magellan Area: *Vema 17*, sta. 13, 46°59.5'S 075°54'W, 2657 m; *Eltanin 11*, sta. 959, 52°55'S 075°00'W, 92-101 m (MC&G 71).

Depth range:

92-2657 m

Ecology:

Unknown.

Remarks:

MCCAIN & GRAY (1971) found 1 female and 3 juveniles of a *Caprella* species which they could not identify to species level due to the lack of diagnostic features. In the genus *Caprella*, in most cases it is necessary to rely on adult males for a correct identification.

Caprellaporema subantarctica GUERRA-GARCÍA
2003a (Fig. 6)

GUERRA-GARCÍA, 2003a: 189-193, figs. 14-18.

Distribution:

S

Antipodes Islands: West of Islands, *Eltanin 27*, sta. 1850, 49°40'S 178°53'E, 103 m (JGG 03a).

Campbell Island: 52°08'S 169°43'E, 91-92 m; west side of Southeast Harbour, 52°36'S 169°09'E, 8 m; Perseverance Harbour, cliffs west of Davis Point, 52°34'S 169°13'E, 23 m (JGG 03a).

Snares Islands: Trumpeter Bay, 48°07'S 166°36'E, 10-14 m (JGG 03a).

Type-locality:

Campbell Island: Smoothwater Bay, cliffs west of East Cape, 52°32'S 169°12'E, 10 m.

Depth range:

8-103 m.

Ecology:

Habitat: collected from algae and coarse and shelly sediments.

Type material location:

USNM, Washington. AM, Sydney.

Remarks:

The new genus *Caprellaporema* was erected on the basis of an abundant material collected from the New Zealand sub-Antarctic islands. This new genus presents a unique diagnosis from the phylogenetic point of view since it shares characteristics with the two large subfamilies of Caprellidae, Phtisicinae and Caprellinae according to MYERS & LOWRY classification (2003).

Deutella vema (MCCAIN & GRAY, 1971)
(Fig. 7)

MCCAIN & GRAY, 1971: 123, figs. 8-9. (*Luconacia vema*).
DE BROYER & RAUSCHERT, 1999: 287. (*Luconacia vema*).
GUERRA-GARCÍA, 2003b: 1070-1073, fig. 10.

Distribution:

M

Magellan Area: *Vema 16*, sta. 37, 51°52'S 67°01'W, 101 m; *Vema 17*, sta. 25, 53°20.5'S 69°32.8'W, 44 m; sta. 29, 52°43.7'S 69°53.7'W, 24 m; sta. 47, 55°07.2'S 66°29.3'W, 71 m; sta. 76, 41°57'S 059°03'W, 81 m; *Eltanin 11*, sta. 958, 52°56'S 75°00'W, 92-101 m; sta. 981, 52°44'S 67°42'W, 40-49 m (MC&G 71).

Type-locality:

Magellan Area: *Vema 17*, sta. 76, 41°57'S 59°03'W, 81 m (MC&G 71).

Depth range:

24-101 m

Ecology:

Unknown

Type material location:

AMNH, New York.

?*Eupariambus* sp. BRANCH *et al.*, 1991

BRANCH *et al.*, 1991: 8, 39-40, fig. on p. 8.

DE BROYER & RAUSCHERT, 1999: 287.

Distribution:

S (Ba+)

Marion and Prince Edward Islands: no loc., 179-527 m (MLB *et al.* 91).

Depth range:

179-527m.

Ecology:

Habitat: on rocky bottoms with an abundance of octocorals, especially *Thouarella variabilis*, and large ophiuroid basket stars (BRANCH *et al.*, 1991).

Remarks:

The lateral view of the specimen as illustrated by BRANCH *et al.* (1991) resembles a *Caprellinoides* species and the identification as *Eupariambus* sp requires confirmation. In any case, the validity of the genus *Eupariambus* remains questionable as the original and only description by K.H. BARNARD (1957) was based on insufficient illustrations.

Mayerella magellanica MCCAIN & GRAY, 1971
(Fig. 8)

MCCAIN & GRAY, 1971: 124-126, fig. 9-10.

DE BROYER & RAUSCHERT, 1999: 287.

GUERRA-GARCÍA, 2003c: 189-194, figs. 1-6.

Distribution:

M + (Ba+)

Magellan Area: *Vema 17*, sta. 11, 43°25'S 075°05'W, 152 m; sta. 12, 43°30'S 074°55'W, 112 m; sta. 15, 47°02'S 075°36'W, 642 m; sta. 68, 41°16'S 060°03'W, 70 m; sta. 74, 41°27'S 059°33'W, 71 m (MC&G 71).

Type-locality:

Magellan Area: *Vema 17*, sta. 11, 43°25'S 075°05'W, 152 m (MC&G 71).

Depth range:

70-642 m.

Extrinsic distribution:

Northern Argentina shelf, off the mouth of Rio de La Plata: *Vema 18*, sta. 9, 36°17'S 053°21'W, 547-676 m (MC&G 71).
Central Chile, Huasco, 28°29'S, 071°16'W, 50 m (JGG 03c).

Extrinsic depth range:

50-676 m.

Ecology:

Habitat: collected from muddy bottoms.

Type material location:

AMNH, New York.

Remarks:

GUERRA-GARCÍA (2003c) redescribed *Mayerella magellanica* on the basis of the material collected from Huasco, central Chile. These Huasco specimens agreed in general with the original description of the Magellan region holotype. However, some differences in the anterolateral

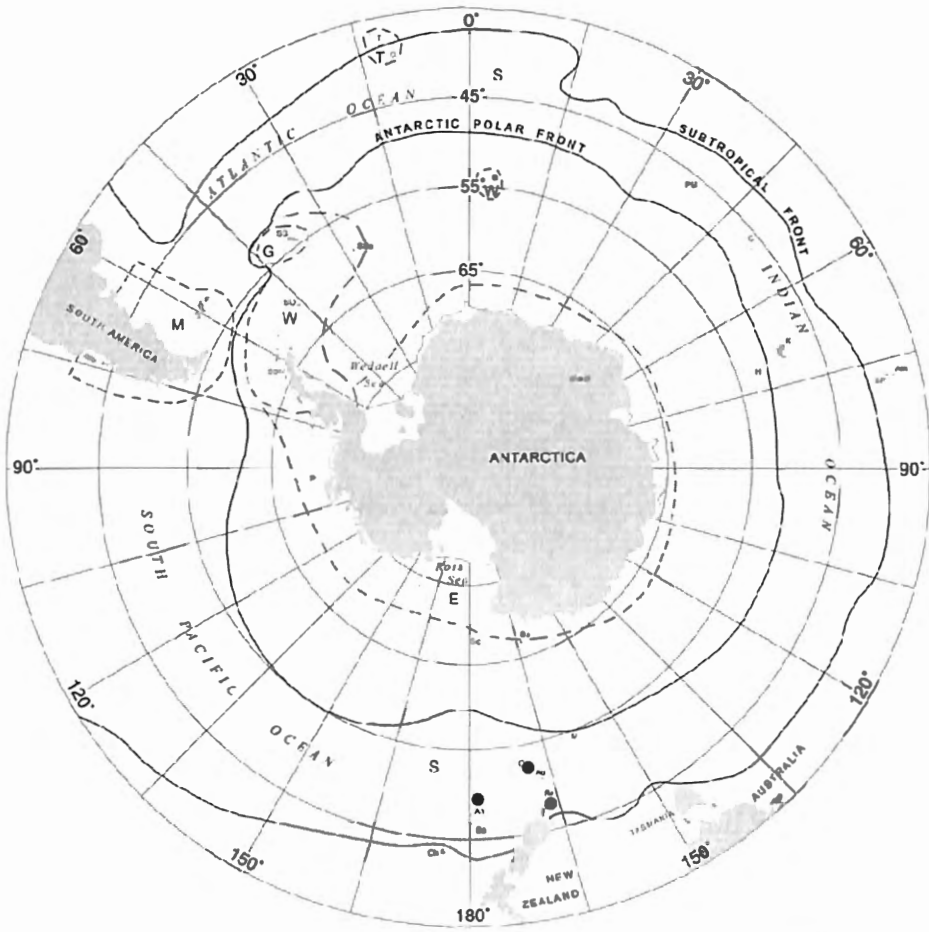


Fig. 6.
Distribution of
Caprellaporema subantarctica.

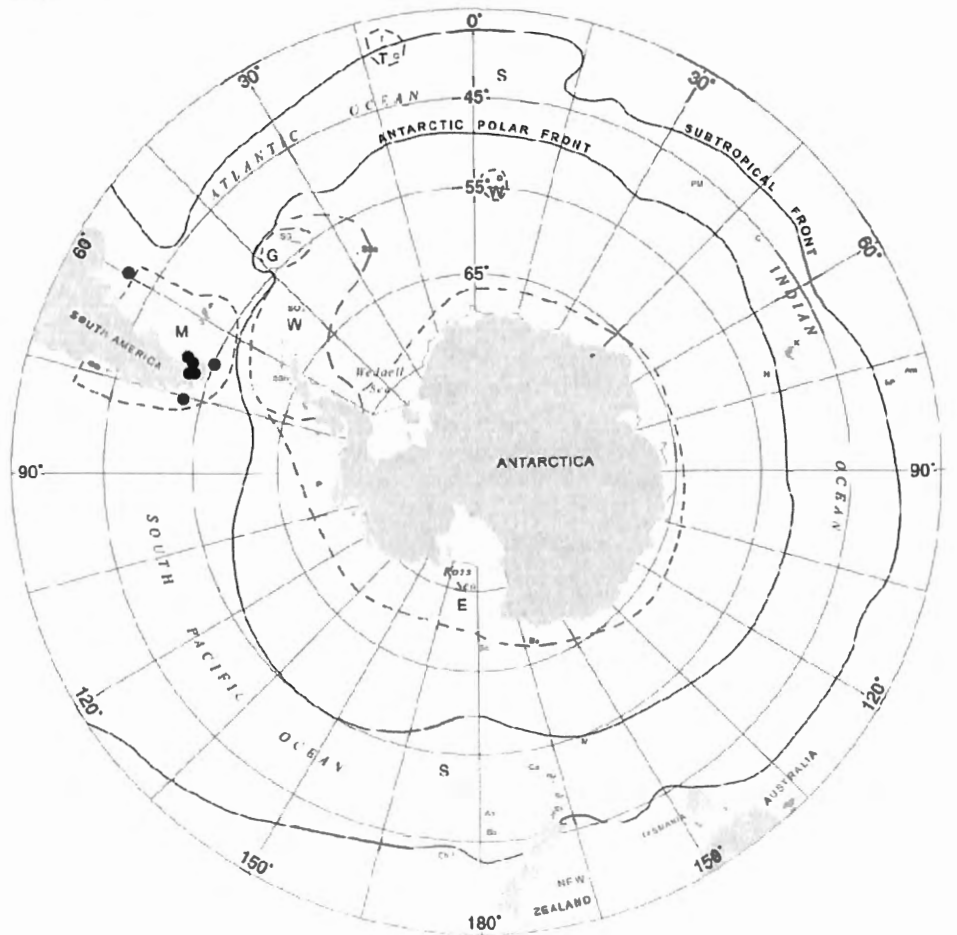


Fig. 7.
Distribution of *Deutella vema*.

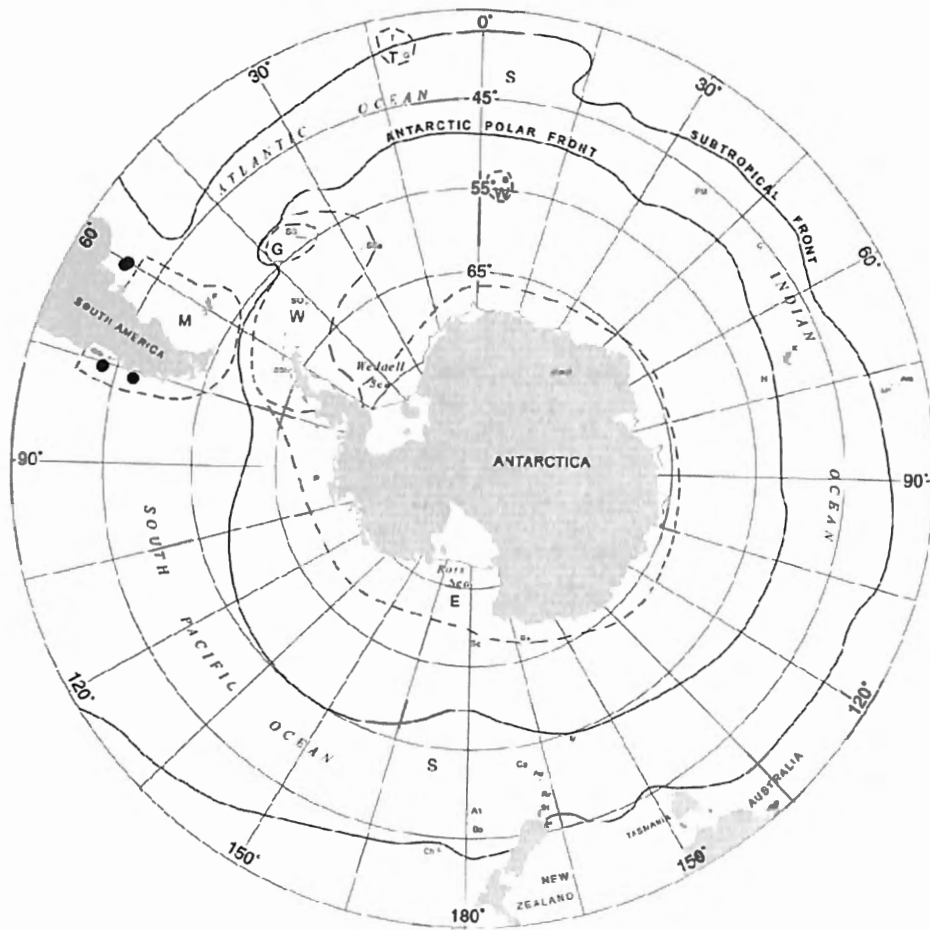


Fig. 8.
Distribution of
Mayerella magellanica.

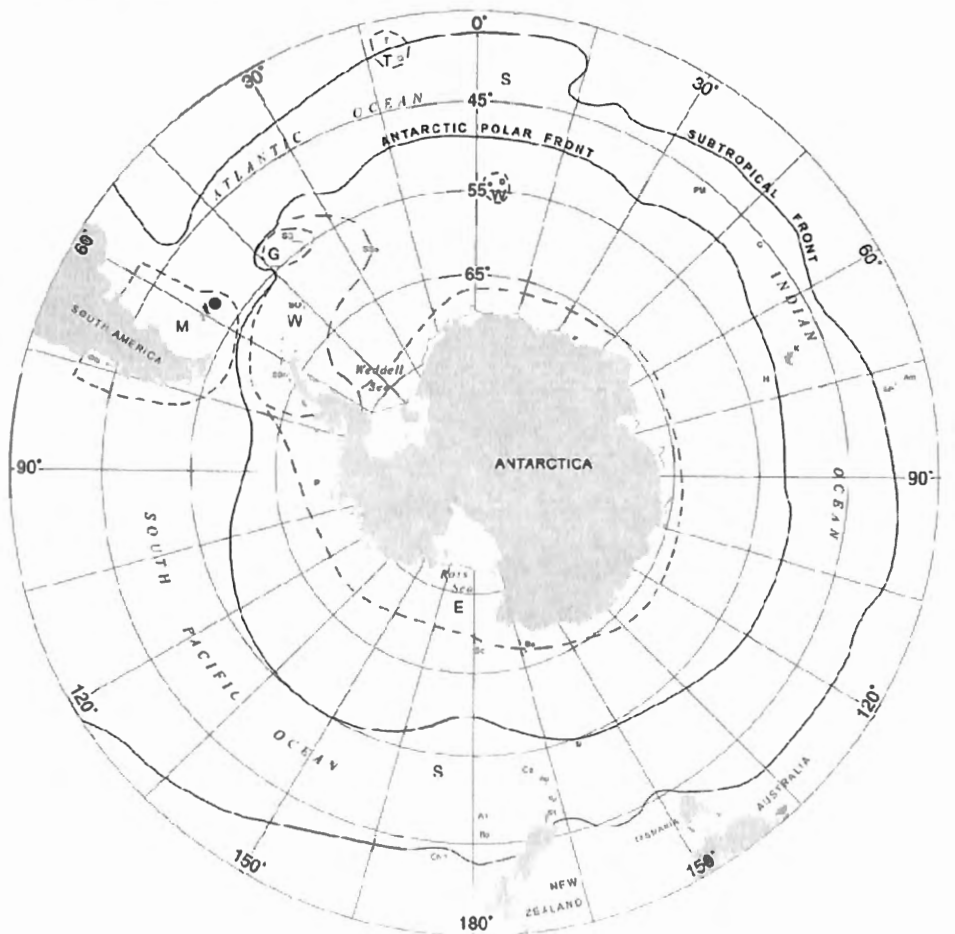


Fig. 9.
Distribution of *Protella trilobata*.

body projections of pereonites 2 to 4, in the setation of basal segments of pereopods 3-4 and in the position of the abdominal appendages indicate the need for a further confirmation of the unity of *Mayerella magellanica* between central and southern Chile. It is supposed that *Mayerella magellanica* could reach the central coast of Chile due to the influence of the cold Humboldt Current coming up from Antarctica along the west coast of South America.

Protella trilobata MCCAIN & GRAY, 1971
(Fig. 9)

MCCAIN & GRAY, 1971: 128-131, figs. 9, 12, 13.
DE BROYER & RAUSCHERT, 1999: 287.

Distribution: M (Ba)

Falkland Islands: *Eltanin* 8, sta. 558, 51°58'S 056°38'W, 646-845 m (MC&G 71).

Type-locality:

Falkland Islands: *Eltanin* 8, sta. 558, 51°58'S 056°38'W, 646-845 m (MC&G 71).

Depth range:

646-845 m.

Ecology:

Unknown.

Type material location:

USNM, Washington.

Protellopsis kergueleni STEBBING, 1888
(Fig. 10)

STEBBING, 1888: 1241-1244, pl. 142.

MAYER, 1890: 17, pl.5: figs. 12-13.

MAYER, 1903: 32.

CHEVREUX, 1913: 86.

ARIMOTO, 1970: 11-13, fig. 1.

MCCAIN & STEINBERG, 1970: 70.

MCCAIN & GRAY, 1971: 131.

LAUBITZ, 1992: 37-38, fig. 7.

Distribution: S (Ba+)

Heard Island: *Umitaka-Maru* 1967, 52°55.7'S 073°20.2'W, 177 m; 52°54.4'S 073°19.5'W, 187 m (IA 70); *Marion Dufresne* 03, sta. 8-24, 52°58'S 073°42'E, 123 m (gear: beam trawl); sta. 8-25, 52°59.4'S 073°38'E, 90 m (gear: Charcot dredge) (DRL 92).

Iles Kerguelen: *Challenger*, off Greenland Harbour, [49°36'S 070°12'E], 55 m (TRS 88); Golfe du Morbihan: between Iles Pender, Bryer and Powell, [49°27'23"S 070°12'01"E], 50 m; *Marion Dufresne* 03, sta. 14-45, 49°45.8'S 064°50.6'E, 262 m (gear: Blake trawl) (DRL 92).

Type-locality:

Iles Kerguelen: *Challenger*, off Greenland Harbour, [49°36'S 070°12'E], 55 m (TRS 88).

Depth range:

50-262 m.

Ecology:

Unknown.

Type material location:

Unknown.

Remarks:

STEBBING (1888)' specimens were immature males (10 mm). ARIMOTO (1970) described and figured the female and LAUBITZ (1992) described and figured an adult male and female and pointed out that the body spination is quite variable in this species.

Pseudaeginella campbellensis GUERRA-GARCÍA, 2003a
(Fig. 11)

GUERRA-GARCÍA, 2003a: 185-189, figs. 9-13.

Distribution: S

Campbell Island: Smoothwater Bay, cliffs west of East Cape, 52°32'S 169°12'E, 10 m; Smoothwater Bay, first bay north west of Boulder Beach, 52°32'S 169°12'E, 10 m; Smoothwater Bay, cliffs on north west side of Boulder Beach, 52°32'S 169°12'E, 8-16 m (bottom: from rock faces and underneath rock overhangs, sponges, coralline algae on boulders, red algae and hydroids from crevice in rock face and encrusting sponges, tunicates, bryozoans and hydroids beneath boulders in beds of *Macrocystis pyrifera*) (JGG 03a).

Type-locality:

Campbell Island: Smoothwater Bay, cliffs west of East Cape, 52°32'S 169°12'E, 10 m.

Depth range:

8-16 m.

Ecology:

Habitat: collected from hard bottoms with sponges, tunicates, bryozoans, hydroids, coralline and red algae.

Type material location:

AM, Sydney.

Pseudaeginella tristanensis STEBBING, 1888
(Fig. 12)

STEBBING, 1888: 1249-1251, pl.143. (*Aeginella tristanensis*).

MAYER, 1890: 37-38, pl. 5: fig. 51, pl.6: fig. 14.

BARNARD K.H., 1932: 300-301, fig. 166.

BARNARD K.H., 1940: 486.

STEPHENSON, 1949: 52-53, fig. 23.

MCCAIN & STEINBERG, 1970: 72.

GRIFFITHS, 1974b: 255.

GRIFFITHS, 1975: 174.

LAUBITZ, 1995: 88-89, fig. 4.

Distribution: T +

Tristan da Cunha: *Challenger*, off Nightingale Island, [37°25'S 012°29'W], 201 m (TRS 88); *Discovery*, sta. 4, Tristan da Cunha Island, [37°05'S 012°15'W], 40-46 m (gear: large dredge) (KHB 32); *Norwegian Scientific Expedi-*

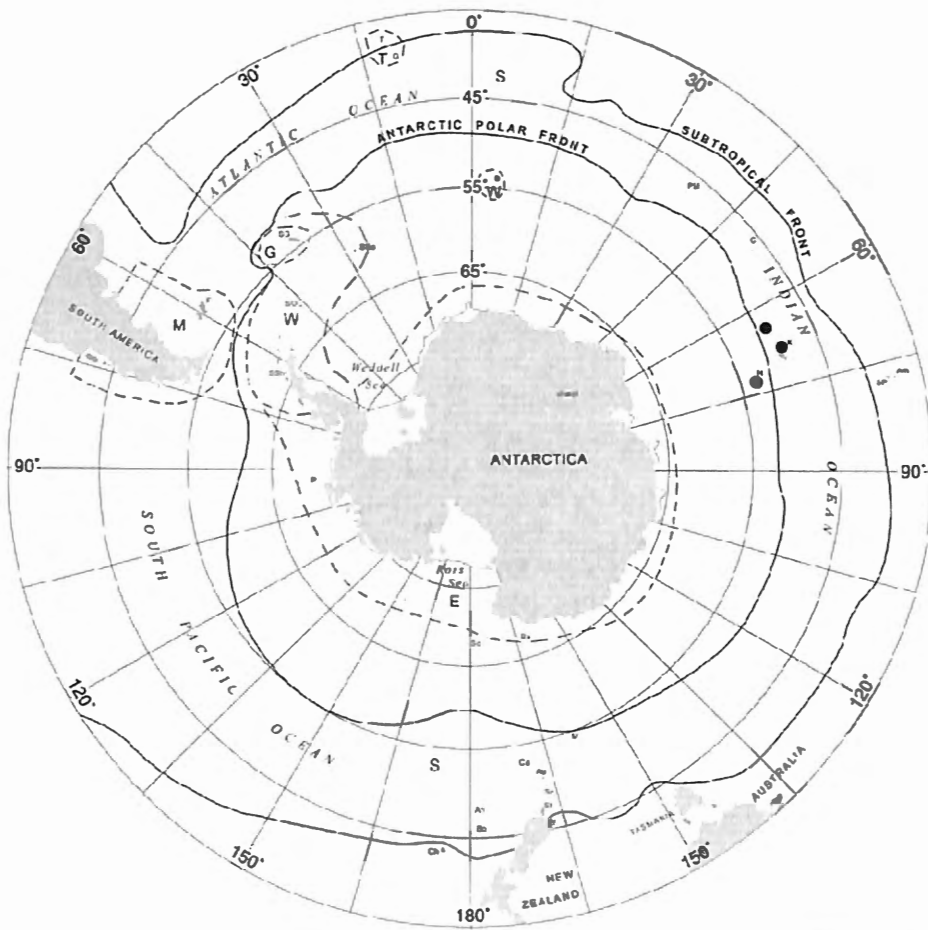


Fig. 10.
Distribution of
Protellopsis kergueleni.

Fig. 11.
Distribution of
Pseudaeginella campbellensis.

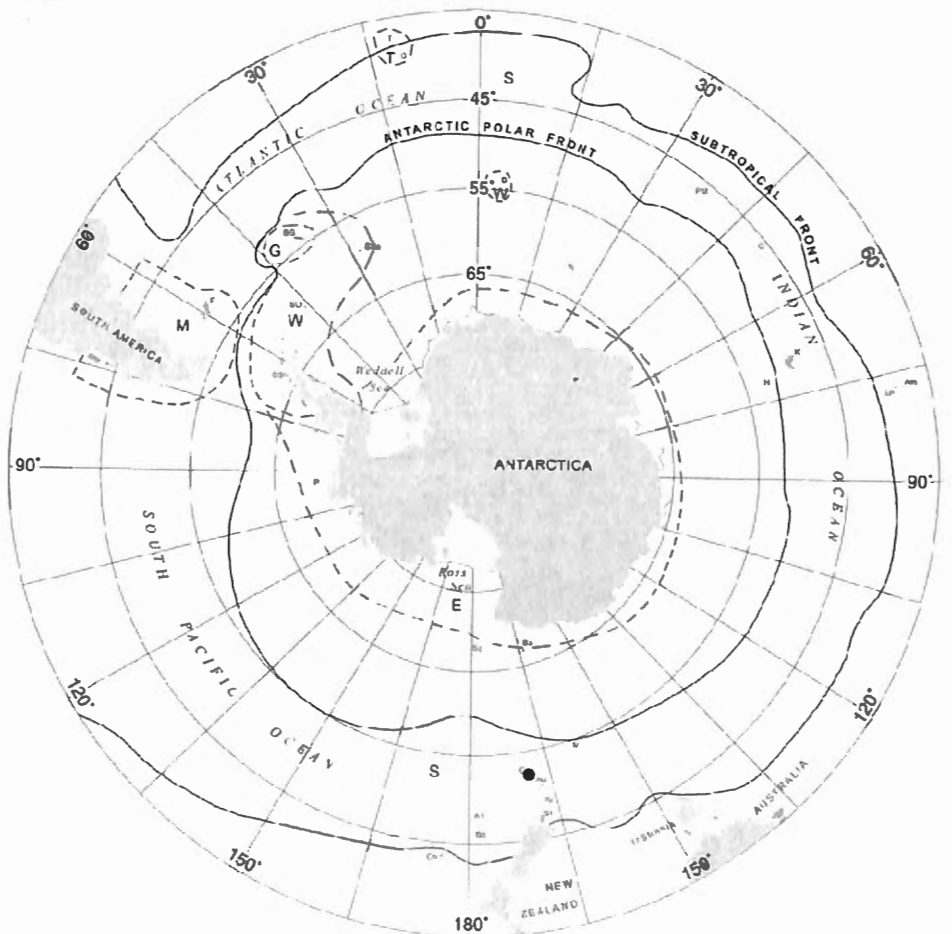


Fig. 12.
Distribution of
Pseudaeginella tristanensis.

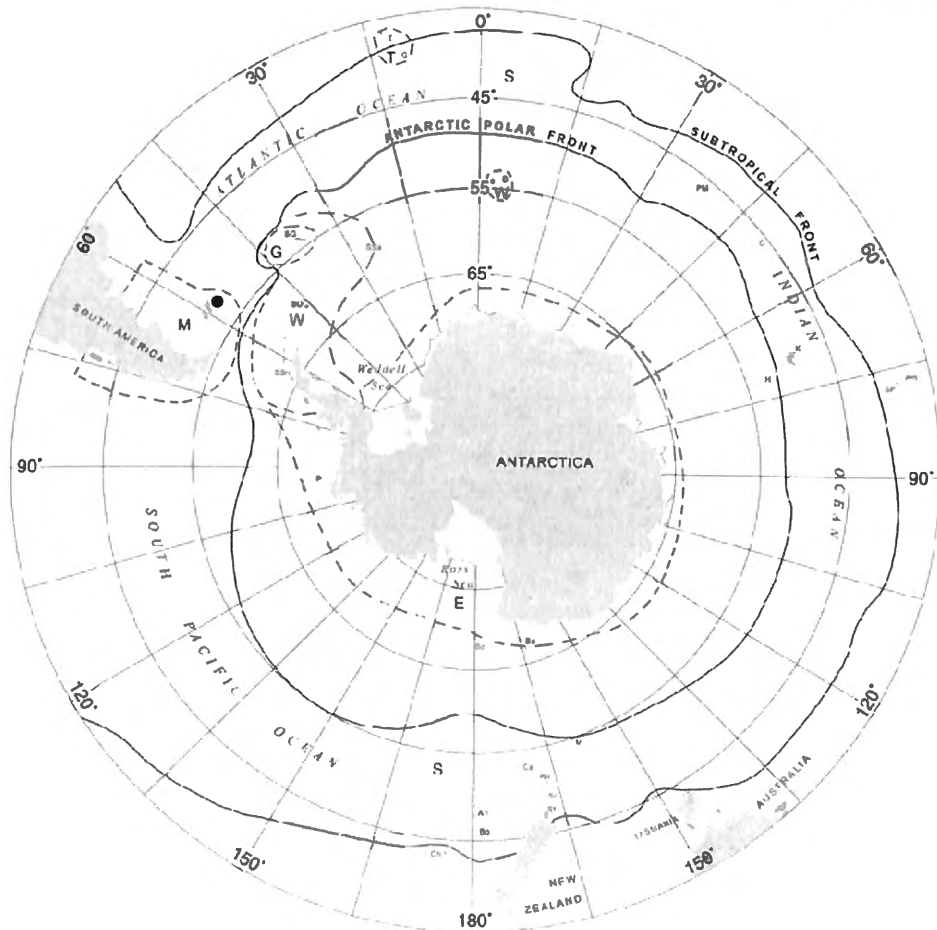
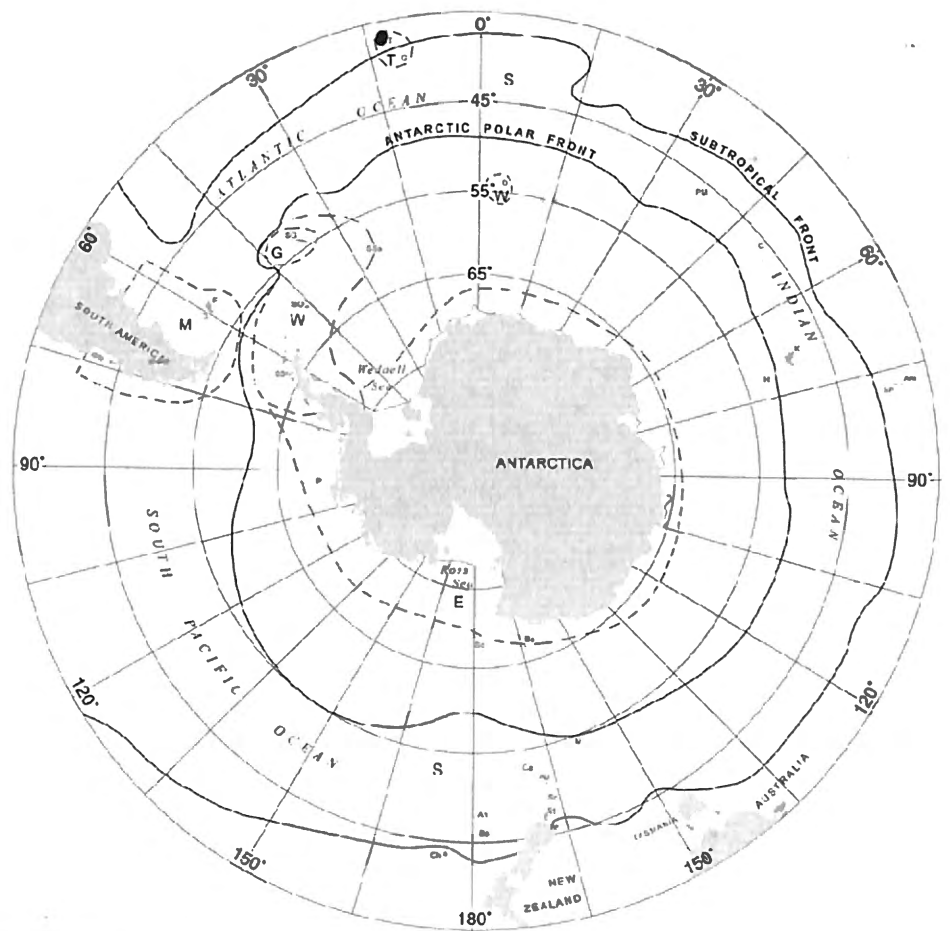


Fig. 13.
Distribution of *Triantella solitaria*.

tion, sta. 40, Tristan da Cunha Island, [37°05'S 012°15'W], 3-13 m; sta. 35, Nightingale Island, [37°25'S 012°29'W], 55 m (KS 49).

Type-locality:

Tristan da Cunha: off Nightingale Island, [37°25'S 012°29'W], 201 m (TRS 88).

Depth range:

3-201 m.

Extrinsic distribution:

South Africa: East London, littoral (KHB 40); Natal, 0-56 m (CLG 74b); Cape Province, 0-29 m (CLG 75). Ile Amsterdam, [37°50'S 077°30'E], 30-80 m (DRL 95).

Extrinsic depth range:

0-80 m.

Ecology:

Unknown.

Type material location:

Unknown.

Remarks:

LAUBITZ (1995) redescribed the species and considered the genus *Falotritella* a junior synonym of *Pseudaeginella* on the basis of the presence of the minute pereopods 3 and 4. She also provided a comparison between the different *Pseudaeginella* species.

***Triantella solitaria* MAYER, 1903**

(Fig. 13)

MAYER, 1903: 32, pl. 1: fig. 18; pl. 2: figs. 38-40; pl. 9: figs. 9, 36, 59

SCHELLENBERG, 1931a: 264-265, 272.

MCCAIN & STEINBERG, 1970: 76.

MCCAIN & GRAY, 1971: 135-136.

DE BROYER & RAUSCHERT, 1999: 287.

Distribution:

M +

Falkland Islands: Port William, [51°41'S 057°48'W], 12 m (bottom: sand, gravel) (AS 31a).

Type-locality:

Northern Argentina: *Siboga*, south of the mouth of Rio de la Plata, 94 m (PM 03).

Depth range:

12 m.

Extrinsic distribution:

Northern Argentina: *Siboga*, south of the mouth of Rio de la Plata, 94 m (PM 03); 37°50'S 056°11'W, 100 m (AS 31a).

Extrinsic depth range:

12-100 m.

Ecology:

Habitat: collected from sand and gravel bottoms.

Type material location:

Unknown.

Remarks:

MCCAIN & STEINBERG (1970) suggested that the type of *Triantella solitaria* may be a juvenile of *Deutella vema*. A

search in most of the larger museums in Europe and United States has not revealed the location of the type material.

Subfamily PHTISICINAE VASSILENKO, 1968

***Aeginoides gaussi* SCHELLENBERG, 1926b**

(Fig. 14)

SCHELLENBERG, 1926b: 465-467, fig. 1.

BARNARD K.H., 1930: 442-443, fig. 63.

BARNARD K.H., 1932: 305-306, fig. 169c, d.

STEPHENSEN, 1947a: 79, fig. 26.

MCCAIN & STEINBERG, 1970: 7-8.

MCCAIN & GRAY, 1971: 112-113, figs. 1-2.

MCCAIN, 1972: 239-241.

VASSILENKO, 1972: 348-350, fig. 2.

ARNAUD, 1974: 252, 318, 536, 593, 649. (eco).

THURSTON, 1974b: 73-74.

ANDRES, 1990: 142, fig. 285.

COLEMAN, 1991b: 4-8, figs. 2-3.

REN & HUANG, 1991: 293-294, fig. 65.

TAKEUCHI & TAKEDA, 1992: 67-71, figs. 1-3.

LAUBITZ, 1992: 30-31, fig. 1.

JAZDZEWSKI et al., 1992: 466.

DE BROYER & RAUSCHERT, 1999: 287.

DE BROYER et al., 1999: 168.

GUTT et al., 2000: 84-87.

GUERRA-GARCÍA & COLEMAN, 2001: 2, fig. 1.

Distribution:

E + W + G + M (Ba+)

Adélie Coast: Géologie Archipelago, 66°39'S 139°55'E; Cape Géodésie, 66°40'S 139°51'E, 50-170 m (MC&G 71); sta. TA-D59, Géologie Archipelago, near Astrolabe Glacier, 90-140 m (bottom: sponges, bryozoans, hydroids; gear: Charcot rectangular dredge); sta. TA-D71, Géologie Archipelago, between Bernard and Curie Islands, 50 m (bottom: sand, hydroids, sponges, bryozoans; gear: Charcot rectangular dredge); sta. TA-D73, Géologie Archipelago, east of Bernard Island, 80-90 m (bottom: stones covered by bryozoans; gear: Charcot rectangular dredge); sta. TA-D74, Géologie Archipelago, east of Bernard Island, 80-90 m (bottom: numerous stones; gear: Charcot rectangular dredge); sta. TA-D75, Géologie Archipelago, 90 m (bottom: mud, sponges, hydroids, bryozoans; gear: Charcot rectangular dredge); sta. TA-D77, Géologie Archipelago, between Bernard and Curie Islands, 135-140 m (bottom: mud, stones covered with bryozoans, sponges and ascidians; gear: Charcot rectangular dredge); sta. TA-D79, Géologie Archipelago, between Bernard and Curie Islands, 110-120 m (bottom: stones; gear: Charcot rectangular dredge); sta. TA-D80, Géologie Archipelago, Curie Island, 110-120 m (bottom: sediment with bryozoans, hydroids, sponges, ascidians; gear: Charcot rectangular dredge); sta. TA-D82, Géologie Archipelago, near Curie Island, 70-90 m (bottom: gravels covered with hydroids, alcyonarians; gear: Charcot rectangular dredge); sta. TA-D89, Géologie Archipelago, between Glacier Astrolabe and Bernard Island, 70-80 m (bottom: mud, sand; gear: Charcot rectangular dredge); sta. TA-D94, Cape

Géodésie, 66°40'S 139°51'E, 150-170 m (bottom: mud, bryozoans, hydroids; gear: Charcot rectangular dredge); sta. TA-D95, Cape Géodésie, 115-135 m (bottom: coarse sand, gravel, bryozoans, hydroids, sponges, alcyonarians; gear: Charcot rectangular dredge); sta. TA-D99, Cape Géodésie, 120-140 m (bottom: bryozoans, hydroids, sponges, alcyonarians; gear: Charcot rectangular dredge); sta. TA-D102, Géologie Archipelago, south-east of Curie Island, 110-130 m (bottom: bryozoans, hydroids, sponges, alcyonarians; gear: Charcot rectangular dredge); sta. TA-D104, Géologie Archipelago, north-east, east and South-east of Bernard Island, 60-75 m (bottom: sand; gear: Charcot rectangular dredge); sta. TA-D123, Géologie Archipelago, north-east, east and south-east of Bernard Island, 60-75 m (bottom: sand; gear: Charcot rectangular dredge); sta. TA-D124, Géologie Archipelago, east of Lamarck Island, 70-80 m (bottom: bryozoans; gear: Charcot rectangular dredge); sta. TA-D125, Géologie Archipelago, east of Lamarck Island, 82-85 m (bottom: bryozoans, some sponges, hydroids; gear: Charcot rectangular dredge); sta. TA-D129, Géologie Archipelago, between Glacier Astrolabe and Lamarck Island, 83-90 m (bottom: bryozoans, hydroids, some sponges, alcyonarians; gear: Charcot rectangular dredge) (JMC 72); south-east of Curie Island, [66°39'S 140°03'E], 110-130 m; east of Bernard Island, [66°40'S 140°02'E], 65-70 m (DRL 92).

Bellinghausen Sea: Peter I Island, 68°47'S 090°35'W, 330 m (KS 47a).

Bransfield Strait: *Discovery*, sta. 175, 63°17'S 059°48'W, 200 m (bottom: mud, stones, gravel; gear: large heavy dredge) (KHB 32); [63°00'S 059°00'W], 160-170 m (bottom: algae); 350 m (SVV 72).

Davis Sea: *Gauss* station, 65°59'S 089°33'E, 350 m (AS 26b); Fulmar Island, [66°32'S 093°01'E], *Mirnyj* station, 20-55 m (bottom: rock); Cape Mabus, [66°33'S 093°01'E], 46 m (bottom: rock); HASWELL Island, [66°31'S 093°00'E], 43 m (bottom: rock, on hydroids) (SVV 72); *PABE I*, sta. D2, 66°S 092°E, 68 m (new record, JGG & CDB, unpubl.).

? **Drake Passage:** no loc. (cited by DRL 92, original source not found).

Falkland Islands: *Vema 17*, sta. 65, 50°18'S 054°11'W, 1498-1501 m (MC&G 71).

Oates Coast: *Terra Nova*, sta. 194, [69°30'S 159°00'E], 329-366 m (KHB 30).

Princess Ragnhild Coast: Breid Bay, 70°09.0'S 023°46.3'E, 275-283 m; Breid Bay, 70°13.7'S 024°25.7'E, 276-289 m; Gunnerus Bank, 68°23.5'S 034°07.5'E, 281-282 m (T&T 92).

Ross Sea: McMurdo Sound, [77°30'S 165°00'E] (AS 26b); *Terra Nova*, sta. 220, off Cape Adare, [71°17'S 170°14'E], 82-92 m (KHB 30); *Glacier*, sta. E187, 72°18'S 170°13'E, 37-42 m (MC&G 71).

South Georgia: *Discovery*, sta. 30, Cumberland West Bay, [54°14'S 036°35'W], 251 m (bottom: mud, stones; gear: large heavy dredge); sta. 39, Cumberland East Bay, [54°17'S 036°26'W], 179-235 m (bottom: grey mud; gear: large otter trawl); sta. 42, off mouth of Cumberland Bay, [54°14'S 036°28'W], 120-204 m (bottom: mud; gear: nets, large otter trawl); sta. 123, off mouth of Cumberland Bay, [54°14'S 036°28'W], 230-250 m (bottom: grey mud; gear: nets, large

otter trawl); sta. 152, 53°51'S 036°18'W, 245 m (bottom: rock; gear: large heavy dredge) (KHB 32); *Eltanin 9*, sta. 671, 54°41'S 038°38'W, 220-320 m (MC&G 71).

South Orkneys Islands: no loc., [60°40'S 045°15'W], (DRL 92); sta. AGB4, Scotia Bay, Laurie Island, 60°44'S 044°37'W (MHT 74b).

South Shetland Islands: *Discovery*, sta. 195, King George Island, Admiralty Bay, 62°07'S 058°28'W, 391 m (bottom: mud, stones; gear: nets) (KHB 32); Clarence Island, 180-260 m (bottom: on hydroids) (SVV 72); *Vema 17*, sta. 45, 62°33'S 059°26'W, 600-604 m; *Eltanin 6*, sta. 410, 61°18'S 056°09'W, 220-240 m; *Eltanin 12*, sta. 1003, 62°41'S 054°43'W, 210-220 m; *Eastwind*, sta. 66-010, 62°43'S 061°51'W, 183 m; sta. 66-012, 62°23'S 060°51'W, 393-417 m; sta. 66-035, 62°12'S 054°25'W, 402-407 m (MC&G 71); 62°17.3'S 055°06.2'W, 528 m; 62°51.6'S 061°06.0'W, 302 m; 62°14.4'S 058°51.7'W, 345 m (R&H 91); *Polarstern ANT VI/2*, Elephant Island, [61°10'S 055°14'W], (gear: commercial fishery bottom-trawl) (COC 91b); King George Island, Admiralty Bay, [62°10'S 058°25'W] (KJ *et al.* 92); Deception Island, Foster Bay, [62°57'S 060°39'W], 112 m; English Strait [62°27'S 059°38'W], between Roberts and Greenwich Islands, 65-325 m (DRL 92); *Polarstern ANT XIV/2*, sta. 130, 61°13.70'S 055°58.10'W, 146 m (GG&C 01); 62°17.3'S 055°06.2'W, 528 m; 62°51.6'S 061°06'W, 302 m; 62°14.4'S 058°51.7'W, 345 m (R&H 91).

Weddell Sea: eastern shelf (CDB *et al.* 99); Kapp Norvegia, 71°29.3'S 014°19.5'W, 210 m (gear: small dredge) (JG *et al.* 00); *Polarstern ANT XIII/3*, sta. 011 GSN 4, 73°22.6'S 021°10.6'W, 338 m; *Polarstern ANT VII/4*, sta. 248 GSN 10, 74°39.9'S 029°31.3'W, 602 m (in stomach of *Trematomus lepidorhinus*) (new records, JGG & CDB, unpubl.).

Type-locality:

Davis Sea: 65°59'S 089°33'E, 350 m (AS 26b).

Depth range:

20-1501 m.

Ecology:

Habitat: collected from hydroids and from various bottoms: mud, sand, gravel, stones, rock, with algae, sponges, bryozoans, hydroids, ascidians, and alcyonarians.

Type material location:

ZMB, Berlin.

Remarks:

This species has been redescribed and illustrated by MCCAIN & GRAY (1971), VASSILENKO (1972), LAUBITZ (1992) and TAKEUCHI & TAKEDA (1992). MCCAIN & GRAY (1971) pointed out that the body spination of this species is quite variable and that there seems to be no clear pattern in the arrangement of dorsal body projections. TAKEUCHI & TAKEDA (1992) figured the most spinose form. GUERRA-GARCÍA & COLEMAN (2001) represented the lateral view of the less spinose variation. These authors figured a mature female which was lacking dorsal spines. They also figured a male without dorsal spines but this male was smaller than the mature female. Usually, males grow up larger than females in the Caprellidea (see TAKEUCHI and HIRANO 1991, 1992, TAKEUCHI 1998). This indicates that GUERRA-GARCÍA & COLEMAN (2001) figured an immature male which has not

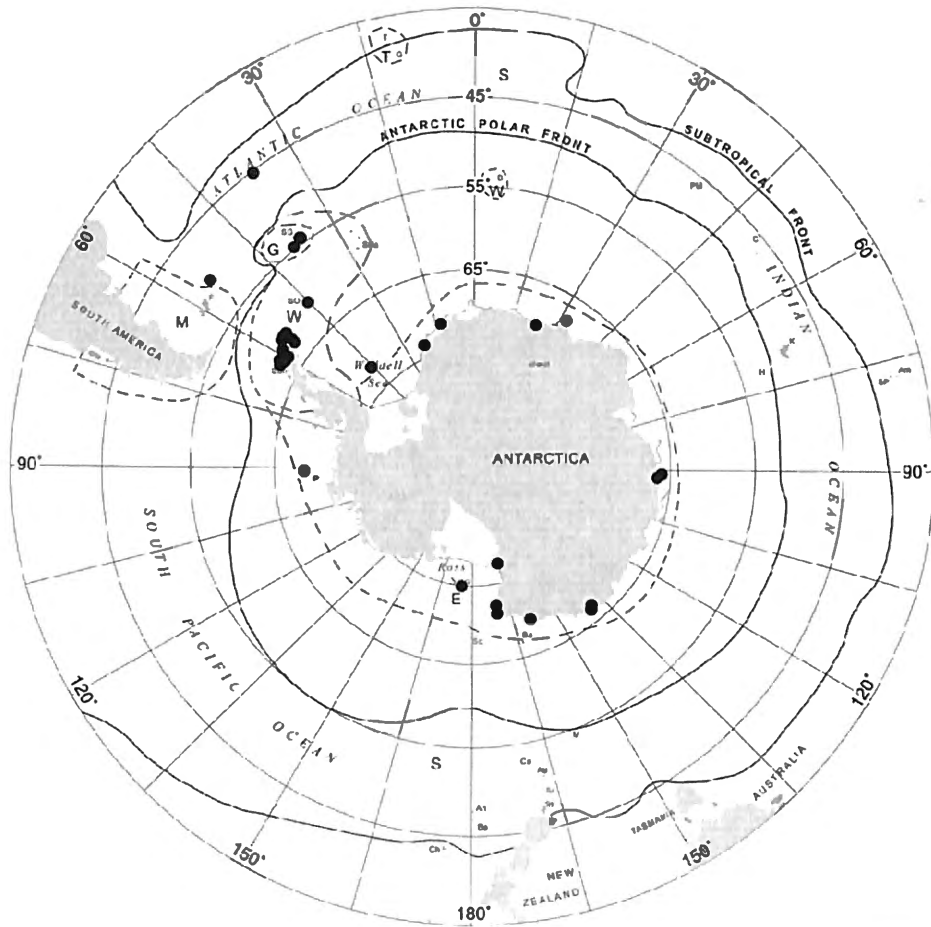
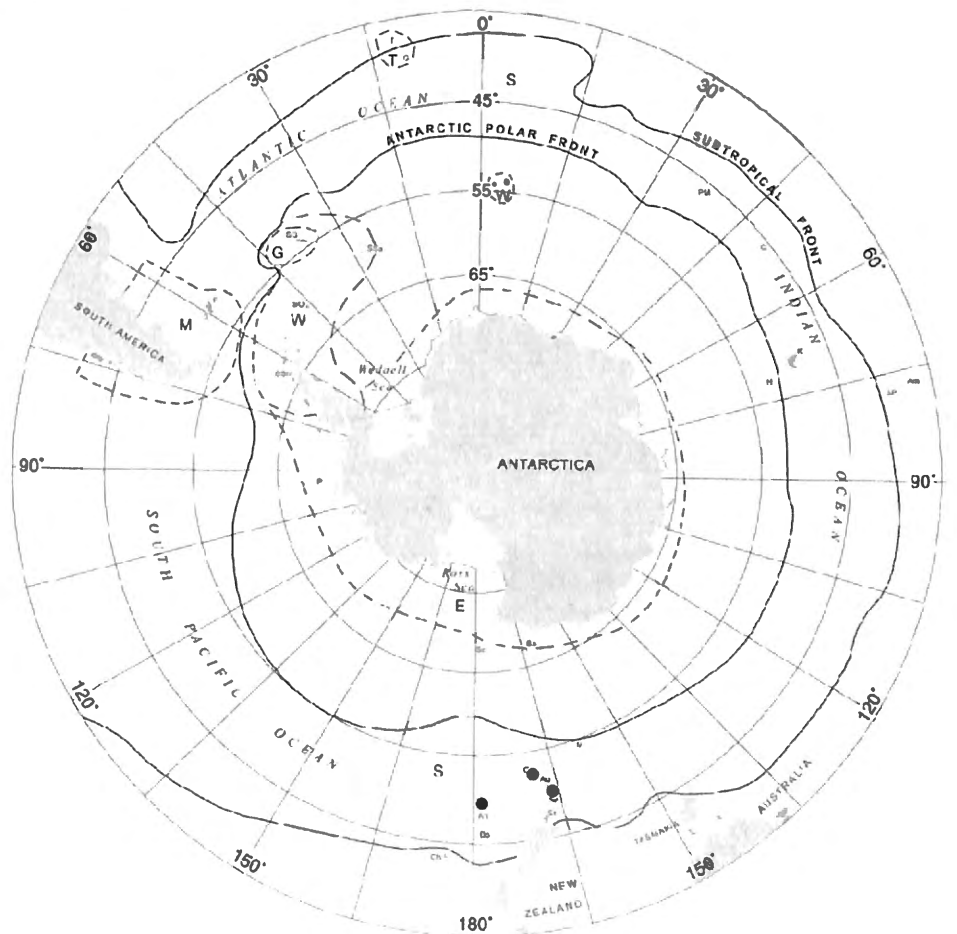


Fig. 14.
Distribution of *Aeginoides gausi*.

Fig. 15.
Distribution of *Caprellina* spp.aff. *longicollis* (records north to Subtropical Front not shown).



developed the sexual dimorphism. Further morphological studies based on fully mature specimens exhibiting sexual dimorphism and a molecular approach would help investigating the value of the dorsal projections as a potential species-level diagnostic character.

***Caprellina* spp. aff. *longicollis* (NICOLET, 1849)**
(Fig. 15)

NICOLET, 1849: 251-252, pl. 4: fig. 3. (*Caprella longicollis*); 252-253, pl. 4: fig. 4. (*Caprella brevicollis*).

BATE, 1862: 362, pl. 57: fig. 4.

THOMSON, 1879a: 330. (*Caprellina novae-zealandiae*).

THOMSON, 1879b: 247, pl. 10: fig. D6. (*Caprellina novae-zealandiae*).

MAYER, 1882: 27-28, figs. 4-5.

CARUS, 1885: 389.

THOMSON & CHILTON, 1886: 141.

MAYER, 1890: 15-16, pl. 6: fig. 4.

REED, 1897: pl. 11: 4. (*Caprella brevicollis*).

MAYER, 1903: 30.

HUTTON, 1904: 261. (*Caprellinopsis longicollis*).

CHILTON, 1909b: 605, 648. (*Caprellinopsis longicollis*).

STEBBING, 1910b: 470-471.

CHEVREUX, 1913c: 85. (*Caprellinopsis longicollis*).

THOMSON, 1913: 245. (*Caprellinopsis longicollis*).

THOMSON & ANDERTON, 1921: 113. (*Caprellinopsis longicollis*).

STEPHENSON, 1927e: 354, 385. (*Caprellinopsis longicollis*).

BARNARD K.H., 1930: 440.

DAY & MORGANS, 1956: 303.

MCCAIN, 1969b: 289-290, fig. 2.

MCCAIN & STEINBERG, 1970: 46, (syn).

MCCAIN & GRAY, 1971: 116.

GRIFFITHS, 1975: 177.

MCCAIN, 1979: 471.

DE BROYER & RAUSCHERT, 1999: 287.

GUERRA-GARCÍA, 2002a: 1291-1302, figs. 1-7.

GUERRA-GARCÍA & THIEL, 2001: 875-877, fig. 3.

GUERRA-GARCÍA, 2003a: 180, fig. 2.

GUERRA-GARCÍA & TAKEUCHI, 2004: 972-974, fig. 2.

Distribution:

S ++

Antipodes Islands: Off Antipodes Islands, [49°42'S 178°50'E] (JMC 69b)

Auckland Islands: Port Ross, south east side of Ocean Island, 50°32'S 166°16'E, 0-3 m (bottom: algae from rocks); Western Harbour, 50°49'S 165°55'E, 10 m (bottom: algae from soft bottom, on anchor of *Acheron*); Waterfall Inlet, 50°49'S 166°13'E, 3-4 m (bottom: red and brown algae on rocks); Enderby Island, Castle Reef, [67°30'S 053°00'E], 0 m (bottom: algae on rocks in high intertidal pool) (JGG 03a).

Campbell Island: Perseverance Harbour, east side of Vire Point, 52°33'S 169°10'E, 3 m (bottom: red algae on rocks); Perseverance Harbour, west side of Davis Point, 52°34'S 169°13'E, 16 m (bottom: *Macrocystis pyrifera* holdfast, red algae and epizoic red algae on mussels), 0 m (bottom: red algae in low intertidal zone), 25 m (bottom: sediment from

level coarse sand and shells); Smoothwater Bay, cliffs on north west side of Boulder Beach, 52°32'S 169°12'E, 16 m (bottom: from rock faces and underneath rock overhangs), 8 m (bottom: sponges, coralline algae and red algae on boulders); Smoothwater Bay, cliffs on north west side of first bay north west of Boulder Beach, 52°32'S 169°12'E, 10 m (bottom: sediment and red algae from boulders), 8 m (bottom: *Macrocystis pyrifera* and entangled drift algae on sloping cliff); Smoothwater Bay, cliffs on north west side of first bay north west of Boulder Beach, 52°32'S 169°12'E, 6-8 m (bottom: brown and red algae from sloping cliff face); Smoothwater Bay, cliffs west of East Cape, 52°33'S 169°13'E, 12-18 m (bottom: holdfast of *Durvillea antarctica*, sediment and red algae from rock crevice); Smoothwater Bay, cliffs west of East Cape, 52°32'S 169°13'E, 5-10 m (bottom: epiphytic red algae on brown algae from sloping rock face); east side of Windlass Bay, 52°33'S 169°04'E, 3 m (bottom: red algae from boulders); mouth of Windlass Bay, 52°33'S 169°04'E, 8 m (bottom: fauna under rocks, some red algae); Northwest Bay, mouth of small cove east of Limestone Point, 52°33'S 169°04'E, 6-8 m (bottom: algae: *Desmarestia*, *Lessonia*, tufted brown algae, red algae, coralline algae, *Codium* and mussels from boulders); Northwest Bay, mouth of small cove east of Limestone Point, 52°33'S 169°04'E, 8 m (bottom: sea urchins, spider crab and red algae with epiphytic coralline algae from rock bottom) (JGG 03a).

Snares Islands: no loc. (MC&S 70); west side of Ho Ho Bay, 48°07'S 166°36'E, 20-22 m (bottom: algae); Mollymawk Bay, 48°07'S 166°36'E, 12-15 m (bottom: algae on rock); South Promontory, 48°07'S 166°36'E, 0 m (bottom: algae in high intertidal zone); East end of Seal Point, 48°07'S 166°36'E, 0-2 m (bottom: algae in large sheltered tide pool); Cod Cavern Gutway, 48°07'S 166°36'E (bottom: algae on rock wall); Trumpeter Bay, 48°07'S 166°36'E, 0-2 m (bottom: algae), 22 m (bottom: fine broken shells); Broughton Island, Divers Cove, 48°07'S 166°36'E, 10-12 m (bottom: algae on rock face) (JGG 03a).

Type-locality:

Chile: no loc. (MC&S 70).

Depth range:

0-25 m.

Extrinsic distribution:

Chile: no loc. (MC&S 70); Coquimbo, 1-5 m (bottom: from algae, under rocks and attached to buoys) (JGG 02a). South Africa (CLG 75). Tasmania, 0.5-15 m (bottom: algae, seagrass, bryozoans) (GG&T 04). New Zealand (North and South Islands, Stewart Island, Brother Islands) (MC&S 70).

Extrinsic depth range:

0-123 m (MC&S 70).

Ecology:

Habitat: collected from algae (coralline, red and brown algae) on rocks or boulders and from various bottoms: coarse sand and shells, boulders or rocks with algae, seagrass, bryozoans, sponges, sea urchins, and spider crab.

Type material location:

Unknown.

Remarks:

Caprellina longicollis (NICOLET, 1849) was redescribed in detail on the basis of specimens collected from Coquimbo, central Chile, which represents the northernmost record for the species (GUERRA-GARCÍA 2002a; GUERRA-GARCÍA & THIEL 2001). Recently, the species have also been recorded from the Subantarctic Islands of New Zealand (GUERRA-GARCÍA 2003a) and Tasmania (GUERRA-GARCÍA & TAKEUCHI 2004).

The comparison of the figures of two male specimens of "*Caprellina longicollis*" from the Temperate region, *i.e.* a male of 11.6 mm body length collected from Chile (GUERRA-GARCÍA 2002a) and a male of 12.1 mm body length from Tasmania (GUERRA-GARCÍA & TAKEUCHI 2004) indicates distinct differences between the two specimens, although (GUERRA-GARCÍA & TAKEUCHI 2004) lacked detailed description and figures of the mouthparts and appendages. The close body length of these two specimens indicates that they both belong to the same mature stage. However, clear differences were recognized in the ratio of each segment, in the morphology of antenna 1 and gnathopod 2. Among the body somites, head combined with pereonite 1 is longest followed by pereonite 6 in the Chilean specimen. In comparison, pereonites 4–6 in the Tasmanian specimen are subequal and longest, and head combined with pereonite 1 is 2/3 of these pereonites length. In the Chilean specimen, antenna 1 is longer than half of the body length, while in the Tasmanian specimen, antenna 1 is shorter. Of the three peduncular articles of antenna 1, the third article in the Chilean specimen is subequal to the second and longer than twice the first article, while in the Tasmanian specimen the third article is shorter than both the second and first article. Of antenna 1 flagellum articles, in the Chilean specimen, basal combined article is larger than the sum of the 7 other articles, while in the Tasmanian specimen, basal combined article is 1/3 of the other 10 articles. On the gnathopod 2 propodus the grasping spine is located about halfway from the proximal end of palm in the Chilean specimen, while in the Tasmanian specimen the grasping spine is located at about 2/5 from the proximal end. THOMPSON (1879b) briefly described *Caprellina novaezealandiae* and figured a male specimen of 20.3 mm from New Zealand. He noted: "second and third segments of pereon shorter than the three following; last segment very short." Later, MCCAIN (1969) redescribed a male *Caprellina longicollis* from New Zealand. MCCAIN's figure shows the following characteristics: pereonites 4 and 5 subequal and longest among body somites (close to the Tasmanian specimen); pereonites 2 and 3 with antero-lateral projection (lacking in both Chilean and Tasmanian specimens); antenna 1 about half of body length (intermediate between the Chilean and Tasmanian specimens); of the three peduncular articles of antenna 1, the third article is subequal to the second one (close to the Chilean specimen); of the flagellar articles of antenna 1, the basal combined article is a little shorter than the sum of the other articles (intermediate between the Chilean and the Tasmanian specimens); on the propodus of gnathopod 2, the grasping spine is located about halfway from the proximal end of palm (close to the Chilean specimen). Of the above characteristics, the presence of antero-lateral projection on pereonites 2 and 3 on New Zealand

specimens indicates that "*Caprellina longicollis*" from New Zealand might be an independent species from "*Caprellina longicollis*" from both Chile and Tasmania.

However, recent detailed revision by one of us (IT) of the "*Caprellina longicollis*" specimens from Tasmania and the Subantarctic Islands held in the collections of the Australian Museum clearly indicated that this material contained three different species all showing antero-lateral projections on pereonites 2 and 3. Detailed comparative studies are still needed to appreciate the value of the morphological variations among specimens so far attributed to "*Caprellina longicollis*", which probably represent a complex of at least three species.

***Caprellinoides mayeri* (PFEFFER, 1888)**

(Fig. 16)

- PFEFFER, 1888: 137-139, pl. 3: fig. 4. (*Caprellina mayeri*).
 MAYER, 1890: 88, pl. 5: figs. 57-58, pl. 6: figs. 15, 26, pl. 7: fig. 48.
 MAYER, 1903: 59, pl. 2: fig. 29, pl. 7: figs. 40-45, pl. 9: figs. 24-25, 62. (*Piperella grata*).
 CHEVREUX, 1913c: 86.
 CHILTON, 1913: 54, 61-62.
 BARNARD K.H., 1930: 441, fig. 62. (*Caprellinoides spinosa*).
 SCHELLENBERG, 1931a: 265, 272.
 BARNARD K.H., 1932: 302-303, fig. 167.
 ARIMOTO, 1970: 13-15, fig. 2.
 MCCAIN & STEINBERG, 1970: 47.
 MCCAIN & STEINBERG, 1970: 47. (*Caprellinoides spinosus*).
 MCCAIN & GRAY, 1971: 116-119, figs. 3-5.
 MCCAIN, 1972: 241-242. (in part).
 VASSILENKO, 1972: 354-356, fig. 5-6. (*Caprellinoides spinosa*).
 THURSTON, 1974a: 106 (in part).
 ARNAUD, 1974: 192, 318, 536, 562, 649. (eco).
 THURSTON, 1974b: 74. (in part).
 LAUBITZ, 1992: 36-38, fig. 5.
 LAUBITZ, 1992: 36. (*Caprellinoides spinosus*).
 DE BROYER & RAUSCHERT, 1999: 287. (in part)
 GUERRA-GARCÍA, 2001c: 215-219, figs. 6-9.
 GUERRA-GARCÍA & COLEMAN, 2001: 2, fig. 2.
 GUERRA-GARCÍA, 2003a: 180-181, fig. 3.

Distribution:

E + W + G + S + M (Ba+)

Adélie Coast: Géologie Archipelago, 66°39'S 139°55'E, 31-85 m (MC&G 71).

Antipodes Islands: *Eltanin*, west of islands, 49°40'S 178°53'E, 103 m (gear: Blake trawl); east of islands, 49°40'S 178°31'E, 86-95 m (gear: Blake trawl) (JGG 03a).

Bransfield Strait: [63°00'S 059°00'W], 160-170 m (bottom: pebbles, silty sand) (SVV 72).

Iles Crozet: *Marion Dufresne 03*, sta. 26-63, 46°21.5'S 051°55'E, 230 m (gear: Blake trawl); sta. 26-64, 46°24'S 051°59'E, 180 m (gear: beam trawl); sta. 30-73, 46°02.3'S 050°50.2'E, 187 m (gear: beam trawl); sta. 31-74, 45°57.2'S 050°32.8'E, 110 m (gear: beam trawl); *Marion Dufresne 08*, sta. 9 CP 74, 46°22.4'S 051°54.3'E, 150-160 m; sta. 9 CP 75,

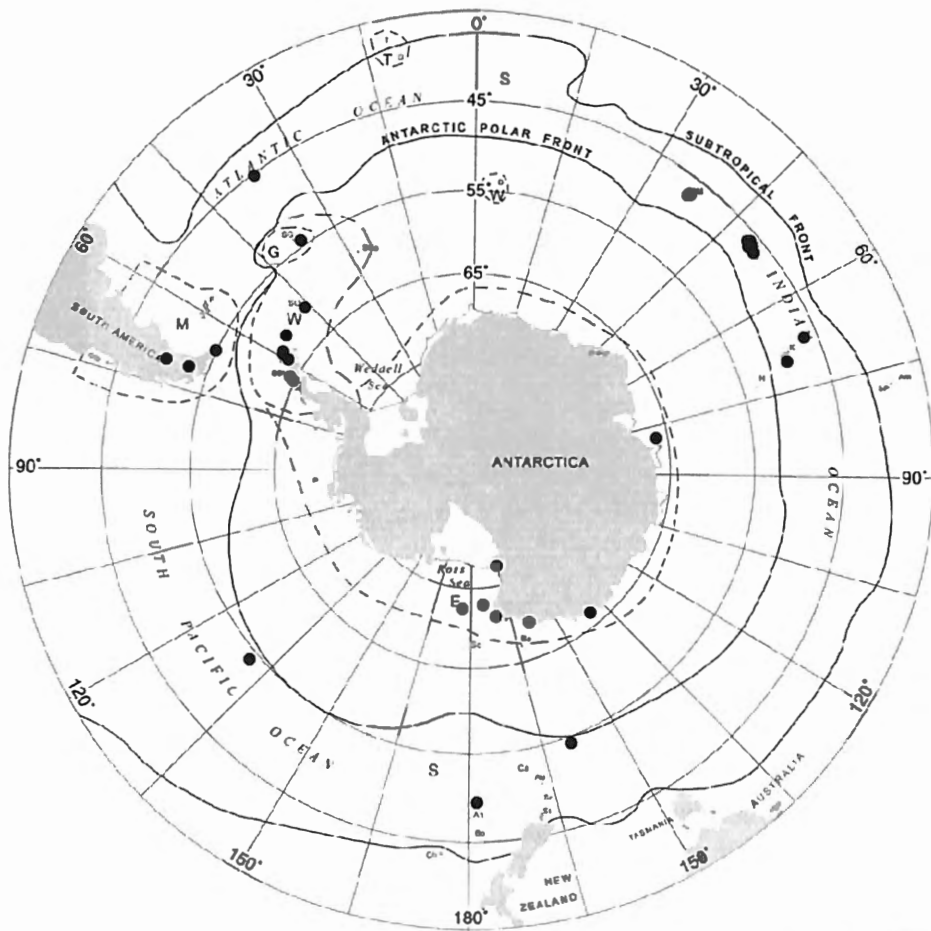


Fig. 16.
Distribution of
Caprellinoides mayeri.

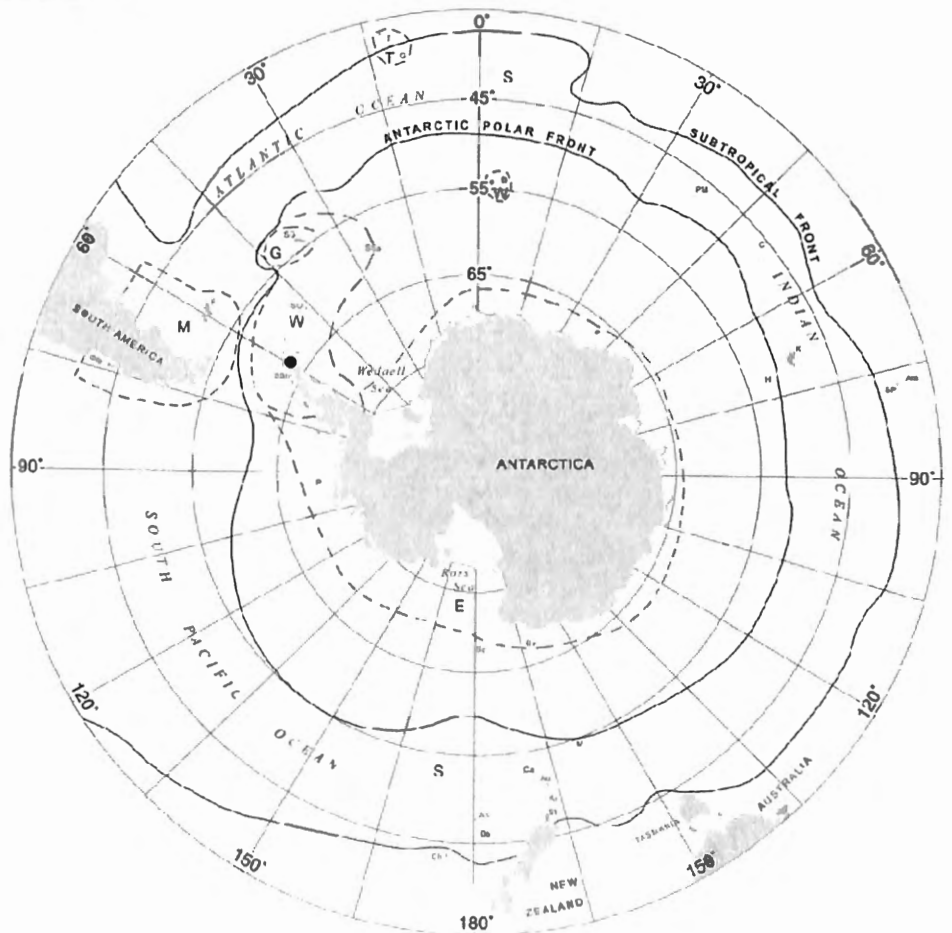


Fig. 17.
Distribution of
Caprellinoides singularis.

46°19.8'S 051°52.3'E, 150-340 m; sta. 57 DC 241, 45°46.2'S 050°05.3'E, 195-200 m; sta. 60 DC 248, 46°02.7'S 049°48.2'E, 245-250 m; sta. 73 CP 295, 46°24.3'S 050°37.8'E, 263-412 m; sta. 77 BB 315, 46°24.5'S 051°59.8'E, 250 m; sta. 78 CP 319, 46°23.7'S 051°58.1'E, 142-170 m; sta. 79 BB 323, 46°24.6'S 051°53.8'E, 100 m (DRL 92).

Iles Kerguelen: *Marion Dufresne 04*, sta. 54 DC 125, 46°19'S 067°56.5'E, 190 m; sta. 101 DC 251, 49°00.4'S 070°45.6'E, 84 m; sta. 108 CP 261, 49°03.4'S 070°41.3'E, 76 m (DRL 92).

Macquarie Island: *Eltanin*, Macquarie Ridge, 54°30'S 158°59'E to 54°34'S 158°59'E, 112-124 m (gear: Blake trawl) (JGG 03a); *Eltanin 16*, sta. 1417, 54°24'S 159°01'E, 79-93 m; sta. 1418, 54°32'S 159°02'E, 86-101 m; *Rotoiti*, NZOI, sta. C732a, 54°29.5'S 158°58.5'E, 22 m (MC&G 71).

Magellan Area: *Vema 17*, sta. 23, 53°47'S 070°17.5'W, 269-280 m; sta. 51, 55°17.5'S 066°00'W, 205-207 m (MC&G 71).

Marion and Prince Edward Islands: *Marion Dufresne 08*, sta. 18 BB 108, 46°49.8'S 037°56.4'E, 138 m; sta. 19 BB 111, 46°46.2'S 038°03.2'E, 190 m; sta. 26 CP 135, 46°50.6'S 038°00.6'E, 135-145 m; sta. 26 DC 136, 46°45.7'S 037°54'E, 185 m; sta. 31 DC 156, 46°59'S 037°46.6'E, 185 m; sta. 31 BB 157, 46°59'S 037°46.8'E, 192 m; sta. 36 BB 173, 46°40.7'S 038°06.7'E, 570-315 m (DRL 92).

Oates Coast: *Atka*, sta. 22A, 72°17.2'S 170°19.3'E, 36 m; sta. 23, 72°05.8'S 172°15.2'E, 392 m; *Burton Island*, sta. 3, 72°08'S 172°10'E, 499 m; *Glacier*, sta. 6, 73°40'S 175°17'E, 521 m; *Staten Island*, sta. 2, 71°21.5'S 170°05'E (MC&G 71).

Palmer Archipelago: sta. 1361, Goudier Island, [64°49'S 063°30'W], Port Lockroy, west of boat harbour, 0.6 m (bottom: under rocks and boulders); sta. A429, 0 m (bottom: among clumps of Rhodophyceae) (MHT 74b).

Ross Sea: *Terra Nova*, sta. 220, off Cape Adare, [71°17'S 170°14'E], 82-92 m; sta. 316, McMurdo Sound, [77°30'S 165°00'E], 348-457 m (KHB 30).

South Georgia: no loc. [quite probably Royal Bay, near Deutsche Station 1882-83, 54°32'S 036°00'W] (GP 88); no loc. (PM 90); Cumberland Bay, Maiviken, [54°14'S 036°28'W], 1-2 m (bottom: among kelp) (AS 31a); *Discovery*, sta. 39, Cumberland East Bay, [54°17'S 036°26'W], 179-235 m (bottom: grey mud; gear: large otter trawl); sta. 42, off mouth of Cumberland Bay, [54°14'S 036°28'W], 120-204 m (bottom: mud; gear: nets, large otter trawl); sta. WS 33, 54°59'S 035°24'W, 130 m (bottom: 135 m, grey mud, stones; gear: tow-net) (KHB 32); *Umitaka-Maru 1967*, sta. 24, 54°59.0'S 034°59.0'W- 54°58.9'S 034°52.1'W, 110 m (bottom: t° 1.2°C) (IA 70).

South Orkney Islands: Signy Island, [60°43'S 045°38'W], 1.5-20 m (MHT 74a).

South Shetland Islands: Clarence Island, [61°12'S 054°05'W], 180-260 m (bottom: on sponges) (SVV 72); *Polarstern ANT XIV/2*, sta. 004, 61°8.80'S 056°3.70'W, 161 m; sta. 130, 61°13.70'S 055°58.10'W, 146 m; sta. 011, 61°12.60'S 055°40.60'W, 97 m (JG&C 01); *Eltanin 12*, sta. 1003, 62°41'S 054°43'W, 210-220 m; sta. 1081, 60°35'S 040°44'W, 631-341 m; *Westwind*, sta. 9, 62°24'S 059°45'W,

167 m (MC&G 71).

Southern Ocean, Indian sector: Wilkes quadrant, *Burton Island*, sta. 5, 66°32.9'S 093°00.9'E, 80 m (MC&G 71).

Southern Ocean, Pacific sector: Udintsev quadrant, *Eltanin 15*, sta. 1343, 54°50'S 129°50'W, 567-604 m; sta. 1345, 54°50'S 129°48'W, 915-1153 m; sta. 1346, 54°49'S 129°48'W, 549 m (MC&G 71).

Type-locality:

South Georgia: no loc. [quite probably Royal Bay, near Deutsche Station 1882-83, 54°32'S 036°00'W] (GP 88).

Depth range:

0-1153 m.

Ecology:

Habitat: collected among red and brown algae, from sponges and from various bottoms: mud, stones, under rocks and boulders.

Type material location:

ZMH, Hamburg. (NHM, London: *Caprellinoides spinosa*, not found).

Remarks :

The genus *Caprellinoides* is a difficult taxonomic case. The four species of *Caprellinoides* traditionally considered (*C. antarcticus*, *C. mayeri*, *C. spinosus* and *C. tristanensis*) were synonymized by MCCAIN & GRAY (1971) as *C. mayeri*. However, VASSILENKO (1972), with some doubts, resurrected *C. antarcticus* and *C. spinosus*. LAUBITZ (1992) figured in detail *C. mayeri* and *C. tristanensis* based on newly collected material and considered both species as valid, reinstating *C. tristanensis* as a distinct species. GUERRA-GARCÍA (2001c) agreed with LAUBITZ (1992) in that *C. mayeri* and *C. tristanensis* are valid species and considered *C. antarcticus* and *C. spinosus* junior synonyms of *C. tristanensis* and *C. mayeri* respectively. This author also described a new species, *C. singularis* based on the presence of bilobed gills (GUERRA-GARCÍA, op. cit.). However, TAKEUCHI & WATANABE (2002) did not accept the synonymy proposed by LAUBITZ (1992) and GUERRA-GARCÍA (2001c) and used the name *C. antarcticus* but without explicit justification.

The genus *Caprellinoides* contains at least three valid species at the moment: *C. singularis*, *C. mayeri* and *C. tristanensis*. Additional material of *Caprellinoides* should be collected for comparative morphological, behavioural and molecular studies to solve definitely the *Caprellinoides* problem and confirm the synonymies.

***Caprellinoides singularis* GUERRA-GARCÍA, 2001c**
(Fig. 17)

GUERRA-GARCÍA, 2001c: 213- 219, figs.1-5.

Distribution:

W

Bransfield Strait: *Polarstern ANT XVII/3*, sta. 158, 63°4.42'S 057°31.36'W, 94-95 m. (gear: Agassiz trawl) (JGG 01c).

Type-locality:

Bransfield Strait: *Polarstern ANT XVII/3*, sta. 158, 63°4.42'S 057°31.36'W, 94-95 m. (gear: Agassiz trawl) (JGG 01c).

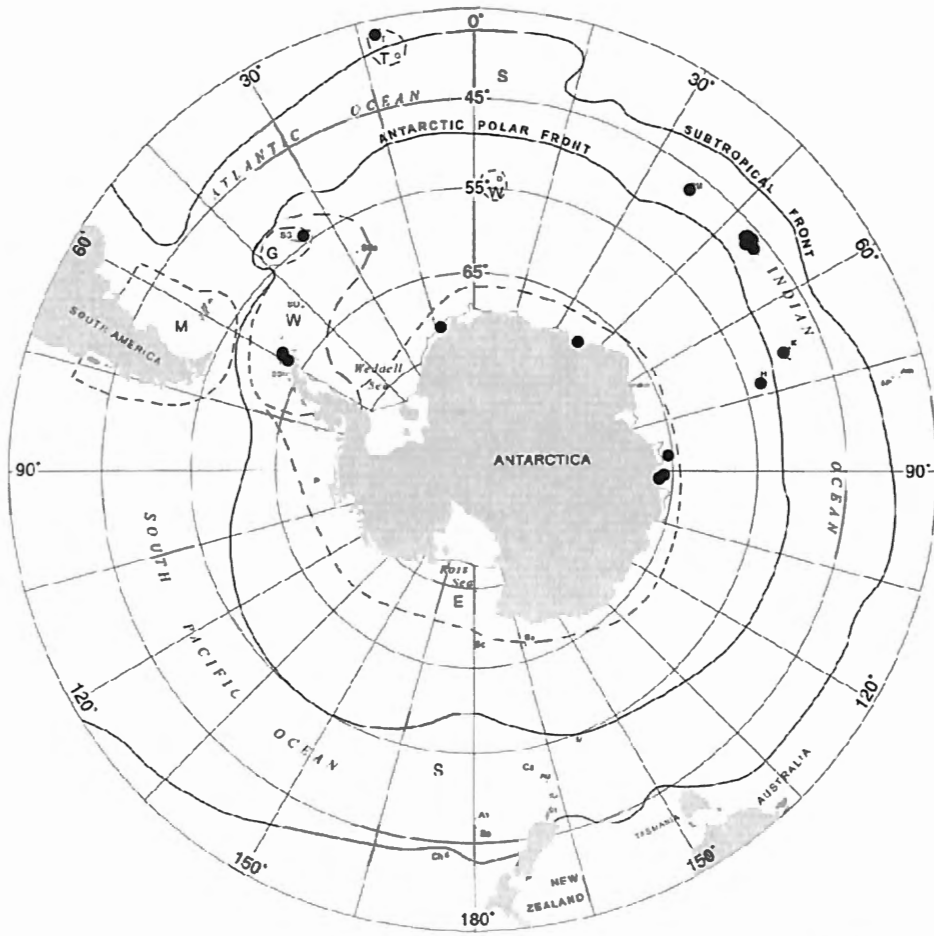


Fig. 18.
Distribution of
Caprellinoides tristanensis.

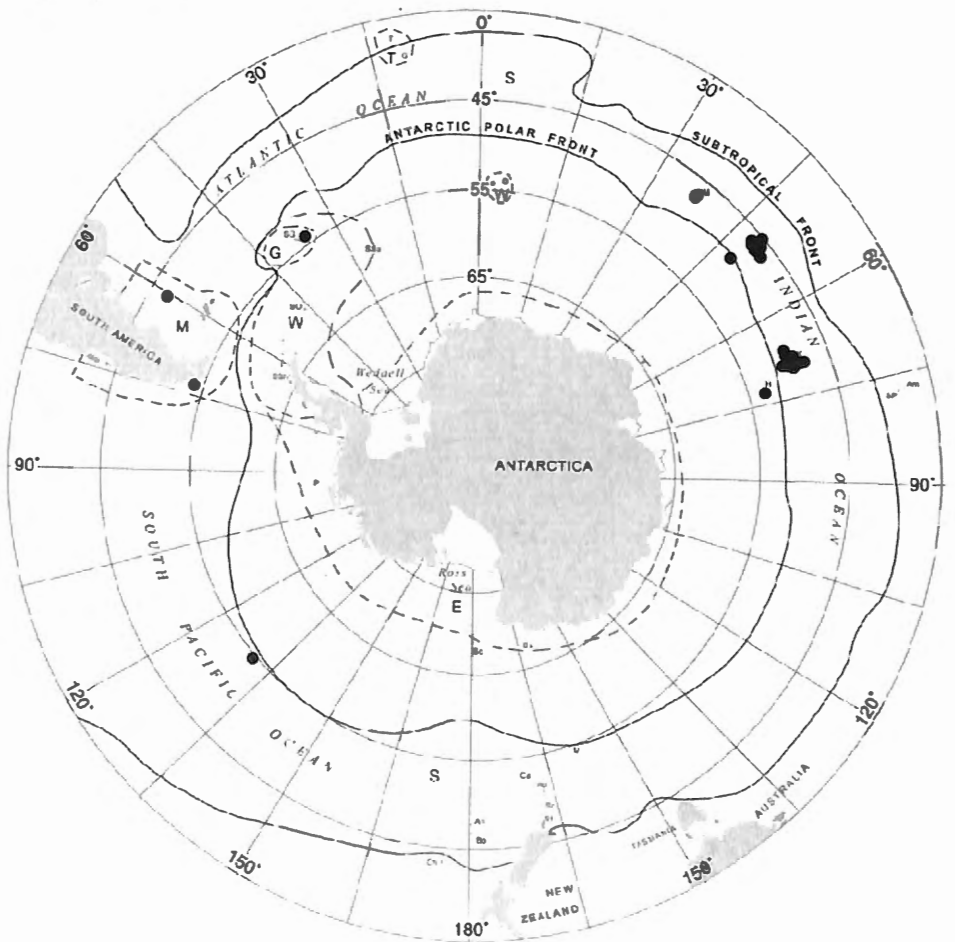


Fig. 19.
Distribution of *Dodecas elongata*.

Depth range:

94-95 m.

Ecology:

Unknown.

Type material location:

ZMH, Hamburg.

Remarks:See remarks under *Caprellinoides mayeri*.***Caprellinoides tristanensis* STEBBING, 1888**

(Fig. 18)

STEBBING, 1888: 1238-1240, pl. 141.

SCHELLENBERG, 1926b: 467-470, fig. 2. (*Caprellinoides antarctica*).

BARNARD K.H., 1932: 301.

STEPHENSEN, 1949: 56-59.

MCCAIN & STEINBERG, 1970: 47.

MCCAIN & STEINBERG, 1970: 47. (*Caprellinoides antarcticus*).MCCAIN & GRAY, 1971: 116-119, fig. 4. (*Caprellinoides mayeri*, in part).VASSILENKO, 1972: 351-354, figs. 3, 4. (*Caprellinoides antarcticus*).

LAUBITZ, 1992: 36, 38, fig. 6.

LAUBITZ, 1995: 88.

DE BROYER & RAUSCHERT, 1999: 287. (*Caprellinoides mayeri*, in part).GUTT *et al.*, 2000: 84-87. (*Caprellinoides antarcticus*).

GUERRA-GARCÍA, 2001c: 216-219, figs. 10-13.

GUERRA-GARCÍA & COLEMAN, 2001: 2, fig. 3.

TAKEUCHI & WATANABE, 2002: 626. (*Caprellinoides antarcticus*).**Distribution:** E + W + G + S + T + (Ba+)**? Bransfield Strait:** no loc. (cited by SVV 72, original source not found).**Iles Crozet:** *Marion Dufresne 03*, sta. 26-64, 46°24'S 051°59'E, 180 m (gear: beam trawl); *Marion Dufresne 08*, sta. 9 CL 61, 46°22.8'S 051°50.5'E, 75-104 m; sta. 50 BB 218, 45°52.2'S 050°35.2'E, 145-143 m; sta. 60 BB 250, 46°03.4'S 049°47.6'E, 267 m; sta. 59 BB 253, 45°59.8'S 049°58.3'E, 215 m; sta. 67 BB 273, 46°17'S 049°37'E, 275 m; sta. 70 BB 281, 46°45'S 050°29'E, 1215-1245 m; sta. 72 BB 291, 46°24.5'S 050°33'E, 187-196 m; sta. 74 BB 297, 46°18.3'S 050°48'E, 210 m; sta. 77 BB 315, 46°24.5'S 051°59.8'E, 250 m (DRL 92).**Davis Sea:** *Gauss* winter station, 66°02'S 089°38'E (bottom: sitting on a *Nymphon*; gear: trap); 65°59'S 089°33'E, 350 m (AS 26b); Fulmar Island [66°32'S 093°01'E], *Mirnyj* station, 15-55 m (bottom: rock, on hydroids *Sertularella*); Tokarev Island [66°32'S 092°59'E], 30-36 m (bottom: rock) (SVV 72); *PABE I*, sta. D1, 66°33'S 093°01'E, 68 m (new record, JGG & CDB, unpubl.).**Enderby Land:** East Ongul Island, Lützw-Holm Bay, 69°S 039°35'E, 12 m (bottom: on *Desmarestia chordalis*) (T&W 02).**Heard Island:** *Marion Dufresne 03*, sta. 8-25, 52°59.4'S 073°38'E, 90 m (DRL 92).**Iles Kerguelen:** Fjord Bossière, [49°25'S 069°41'E], 10-15 m (DRL 92).**Marion Island:** *Marion Dufresne 08*, sta. 19 BB 111, 46°46.2'S 038°03.2'E, 190 m (DRL 92).**South Georgia:** *Discovery*, sta. MS 14, Cumberland East Bay, off Sappho Point, [54°17'S 036°26'W], 110-190 m (gear: small dredge) (KHB 32).**South Shetlands:** *Polarstern ANT XIV/2*, sta. 130, 61°13.70'S 055°58.10'W, 146 m (GG&C 01); King George Island, Admiralty Bay, sta. CA 121, [62°10'S 058°25'W] (new record, JGG & CDB, unpubl.).**Tristan da Cunha:** off Nightingale Island, [37°25'S 012°29'W], 201 m (TRS 88).Weddell Sea: eastern shelf, *Polarstern ANT XIII/3*, sta. 26, Kapp Norvegia, 71°29.3'S 014°18.6'W, 216 m (gear: small dredge) (JG *et al.* 00).**Type-locality:**

Tristan da Cunha: off Nightingale Island, [37°25'S 012°29'W], 201 m (TRS 88).

Depth range:

10-1245 m.

Ecology:

Habitat: collected from hydroids on rocky bottoms, from algae and from a pycnogonid.

Extrinsic distribution:

Ile Amsterdam: CP-07, 37°42.2' S 77°39.0'E, 1680 m (gear: beam trawl) (DRL 95).

Extrinsic depth range:

1680 m (DRL 95).

Type material location:NHM, London: not found. (ZMB, Berlin: *Caprellinoides antarcticus*).**Remarks:**See remarks under *Caprellinoides mayeri*.***Dodecas elongata* STEBBING, 1883**

(Fig. 19)

STEBBING, 1883: 207;

STEBBING, 1888: 1233-1237, pls. 139-140.

BARNARD K.H., 1932: 303-304, fig. 169b. (*Dodecas reducta*).

MCCAIN & STEINBERG, 1970: 49.

MCCAIN & GRAY, 1971: 119.

MCCAIN & GRAY, 1971: 119-120, figs. 2-6. (*Dodecas eltaninae*).MCCAIN & GRAY, 1971: 121. (*Dodecas reducta*).

VASSILENKO, 1972: 346-347, fig. 1.

LAUBITZ, 1992: 31-34, fig. 2.

LAUBITZ, 1995: 85.

DE BROYER & RAUSCHERT, 1999: 287.

Distribution:

G + S + M + (Ba+)

Iles Crozet: *Marion Dufresne 03*, sta. 26-64, 46°24'S 051°59'E, 180 m (gear: beam trawl); sta. 30-73, 46°02.3'S 050°50.2'E, 187 m (gear: beam trawl); sta. 31-74, 45°57'S 050°32.8'E, 110 m; *Marion Dufresne 08*, sta. 50 DC 216, 45°51.5'S 050°37.8'E, 150 m; sta. 57 DC 241, 45°46.2'S 050°46.2'E, 195 m; sta. 60 DC 248, 46°02.7'S 049°48.2'E, 245 m; sta. 64 DC 268, 46°02'S 049°08.5'E, 930-900 m; sta. 46 CP 204, 46°10.6'S 050°44.7'E, 375-490 m; sta. 48 CP 209, 46°05'S 050°37.1'E, 200-140 m; sta. 62 CP 257, 45°05.7'S 050°01.9'E, 210 m; sta. 68 CP 275, 46°16.6'S 049°37'E, 270-262 m; sta. 78 CP 319, 46°23.7'S 051°58.1'E, 142-170 m; sta. 60 BB 250, 46°03.4'S 049°47.6'E, 267 m; sta. 59 BB 253, 45°59.8'S 049°58.3'E, 215 m; sta. 63 BB 259, 46°04.7'S 049°19'E, 480-525 m; sta. 67 BB 273, 46°17'S 049°37'E, 275 m; sta. 72 BB 291, 46°24.5'S 050°33'E, 187-196 m; sta. 74 BB 297, 46°18.3'S 050°48'E, 210 m; sta. 77 BB 315, 46°24.5'S 051°59.8'E, 250 m; sta. 79 BB 323, 46°24.6'S 051°53.8'E, 100 m (DRL 92).

Heard Island: *Marion Dufresne 03*, sta. 8-25, 52°59.4'S 073°38'E, 90 m (DRL 92).

Iles Kerguelen: Baie de Rhodes, [49°00'S 069°20'E], 174m (bottom: volcanic mud); off London River, [coord.?], 201 m (bottom: volcanic mud) (TRS 83; TRS 88); *Ob*, sta. 122, 64 m (SVV 72); Ker-D40, Golfe du Morbihan: north of Ile Longue [49°27'23"S 070°12'01"E], 130 m (gear: small Charcot dredge); Ker-D74, between Iles Pender, Bryer and Powell, [49°27'23"S 070°12'01"E], 50 m (gear: small Charcot dredge); Ker-B17, N of Ile Australia, [49°27'23"S 070°12'01"E], 24 m (gear: orange peel bottom sampler); *Marion Dufresne 03*, sta. 20-56, 48°13.4'S 070°14.3'E, 130 m (gear: beam trawl); sta. 24-61, 50°10.7'S 069°48.7'E, 195 m (gear: Blake trawl); *Marion Dufresne 04*, sta. 29 DC 71, 49°31'S 069°11.7'E, 25 m; sta. 34 DC 88, 49°27.4'S 068°10.7'E, 185 m; sta. 37 DC 91, 49°26.5'S 067°19.9'E, 310 m; sta. 51 DC 118, 48°43.8'S 068°44.5'E, 95 m; sta. G 63 DC 152, 48°40.7'S 069°15.0'E, 335 m; sta. 74 DC 178, 49°02.3'S 049°01.1'E, 30 m; sta. G 80 DC 192, 49°01.1'S 069°23.7'E, 136 m; sta. 85 DC 202, 49°06.1'S 070°13.1'E, 51 m; sta. 89 DC 314, 48°38;1'S 070°04.7'E, 105 m; sta. 99 DC 247, 49°07.2'S 070°37.2'E, 44 m; sta. 100 DC 248, 49°03.6'S 070°40.5'E, 73 m; sta. 88 CP 213, 48°54.6'S 069°59.3'E, 87 m; sta. 93 CP 226, 47°44.8'-47°43.4'S 070°15.7'-070°12.5'E, 164-162 m; sta. 108 CP 261, 49°03.4'S 070°41.3'E, 76 m (DRL 92); *IRScNB-KER 82*, Ile Suhm, [49°30'S 070°10'E], sta. D19, 50 m, sta. D25, 30 m, sta. D35, 25 m, sta. N10, near Fosse de Channer, [49°24'10"S 070°10'07"E], 55 m (new record, JGG & CDB, unpubl.).

Magellan Area: *Vema 17*, sta. 18, 53°55'S 071°16.8'W, 248-262 m; *Vema 18*, sta. 12, 47°09'S 60°38'W, 424-428 m (MC&G 71).

Marion and Prince Edward Islands: *Marion Dufresne 08*, sta. 15 BB 88, 46°57.7'S 037°59.9'E, 204 m; sta. 18 BB 108, 46°49.8'S 037°56.4'E, 138 m; sta. 36 CP 175, 46°40.9'S 038°07.2'E, 570 m (DRL 92).

South Georgia: *Discovery*, sta. 39, Cumberland East Bay, [54°17'S 036°26'W], 179-235 m (bottom: grey mud; gear: large otter trawl) (KHB 32).

Southern Ocean, Pacific sector: Udintsev quadrant, *Eltanin 15*, sta 1343, 54°50'S 129°50'W, 567-604 m; sta. 1346, 54°49'S 129°48'W, 549 m (MC&G 71).

Type-locality:

Iles Kerguelen: Baie de Rhodes, [49°00'S 069°20'E], 174m (bottom: volcanic mud); off London River, [coord.?], 201 m (bottom: volcanic mud) (TRS 83; TRS 88).

Depth range:

24-930 m.

Ecology:

Habitat: collected from muddy bottoms.

Extrinsic distribution:

St Paul and Amsterdam Islands, 165 -2010 m (DRL 95)

Extrinsic depth range:

165-2010 m (DRL 95).

Type material location:

NHM, London.

Remarks:

Dodecas elongata has been figured in detail by LAUBITZ (1992). This author considered *D. eltaninae* MCCAIN & GRAY, 1971 and *D. reducta* K.H. BARNARD, 1932 synonyms of *D. elongata*.

***Dodecasella elegans* K.H. BARNARD, 1931**

(Fig. 20)

BARNARD K.H., 1931: 430.

BARNARD K.H., 1932: 304-305, figs. 168-169a.

MCCAIN & STEINBERG, 1970: 50.

MCCAIN & GRAY, 1971: 121-122.

RAUSCHERT, 1990c: 455.

RAUSCHERT, 1991: 38.

TAKEUCHI & TAKEDA, 1992: 71-76, figs. 4-6.

DE BROYER & RAUSCHERT, 1999: 287.

GUTT *et al.*, 2000: 84-87. (*Caprellinoides elegans*).**Distribution:**

E + W + G (Ba+)

Davis Sea: *PABE I*, sta. D1, 66°33'S 093°01'E, 68 m (new record, JGG & CDB, unpubl.).

Princess Ragnhild Coast: Breid Bay, sta. 5, 70°09'S 023°46.3'E, 275-283 m (gear: beam trawl); Gunnerus Bank, 68°23.5'S 034°07.5'E, 281-282 m (gear: beam trawl) (T&T 92).

Scotia Sea: *Polarstern ANT XIX/3*, sta. 046/7, from 60°38.21'S 053°57.22'W to 60°38.07'S 053°57.29'W, 2893-2894 m (gear: epibenthic sledge) (new record, JGG & CDB, unpubl.).

South Georgia: *Discovery*, sta. 42, off mouth of Cumberland Bay, [54°14'S 036°28'W], 120-204 m (bottom: mud; gear: large otter trawl, nets); sta. 45, off 'Jason Light', [54°17' S 036°30'W], 238-270 m (bottom: grey mud; gear: nets, tow-net of coarse silk); sta. 123, off mouth of Cumberland Bay, [54°14'S 036°28'W], 230-250 m (bottom: grey mud; gear: large otter trawl, nets); sta. 140, Stromness Harbour to Larsen Point, [54°09'S 036°41'W], 122-136 m (bottom: green mud, stones; gear: nets); sta. 144, off mouth of

Stromness Harbour, [54°09' S 036°41'W], 155-178 m (bottom: green mud, sand; gear: nets, tow-net of coarse silk) (KHB 32).

South Shetland Islands: King George Island, 62°11'S 058°52'W (MR 91); Fildes Peninsula [62°12'S 058°58'W]; Maxwell Bay [62°15'S 058°51'W] (MR 90).

Weddell Sea: *Polarstern* ANT XIII/3, sta. 13, south of Vestkapp, 73°36.3'S 022°19'W, 620 m (gear: bottom trawl); sta. 5, Kapp Norvegia, 71°41.1'S 012°44.3'W, 227 m (gear: bottom trawl); sta. 6, Kapp Norvegia, 71°31.8'S 013°34.5'W, 254 m (gear: Agassiz trawl); sta. 2, Kapp Norvegia, 71°18.7'S 012°17.1'W, 170 m (gear: Agassiz trawl); sta. 26, Kapp Norvegia, 71°29.30'S 014°19.50'W, 210 m (gear: small dredge) (JG et al. 00).

Type-locality:

South Georgia: *Discovery*, sta. 123, off mouth of Cumberland Bay, [54°14'S 036°28'W], 230-250 m (bottom: grey mud; gear: large otter trawl, nets) (KHB 32).

Depth range:

68-2894 m.

Ecology:

Habitat: collected from muddy and sandy bottoms.

Type material location:

NHM, London.

Remarks:

Complete redescription and illustrations of *Dodecasella elegans* can be found in TAKEUCHI & TAKEDA (1992). K.H. BARNARD (1931) and TAKEUCHI & TAKEDA (1992) reported that male gills on pereonite 4 of this species enlarge during growth, and recently JMGG has examined adult males of *D. elegans* with extremely enlarged gills.

***Dodecasella georgiana* (SCHELLENBERG, 1931a)**

(Fig. 21)

SCHELLENBERG, 1931a: 262-264, fig. 136. (*Dodecasella georgiana*).

MCCAIN & STEINBERG, 1970: 49. (*Dodecas georgiana*).

MCCAIN & GRAY, 1971: 121-122, figs. 2, 7.

LAUBITZ, 1992: 33-34, fig. 3.

DE BROYER & RAUSCHERT, 1999: 287.

Distribution:

G + S + (Ba+)

Iles Crozet: *Marion Dufresne* 03, sta. 26-64, 46°24'S 051°59'E, 180 m (gear: beam trawl); sta. 30-73, 46°02.3'S 050°50.2'E, 187 m (gear: beam trawl); *Marion Dufresne* 08, sta. 68 CP 275, 46°16.6'S 049°37'E, 270-262 m (DRL 92).

South Georgia: Maiviken, [54°14'S 036°30'W], 75 m (bottom: clay, algae); Cumberland Bay; [54°14'S 036°28'W], 252-310 m (bottom: clay, stones) (AS 31a).

Southern Ocean, Pacific sector: Udintsev quadrant, *Eltanin* 23, sta; 1691, 53°56'S 140°19'W, 362-567 m (MC&G 71).

Type-locality:

South Georgia: Maiviken, [54°14'S 036°30'W], 75 m (bottom: clay, algae); Cumberland Bay; [54°14'S 036°28'W], 252-310 m (bottom: clay, stones) (AS 31a).

Depth range:

75-1475 m.

Extrinsic distribution:

Southwest Atlantic: Plata quadrant, Argentinian Basin: Vema 15, sta. 131, 40°14.6'S 055°24.6'W, 1475 m (MC&G71).

Extrinsic depth range:

1475 m.

Ecology:

Habitat: collected from clay with algae or stones.

Type material location:

SMNH, Stockholm.

Remarks:

LAUBITZ (1992) illustrated this species in detail and reported the differences with *Dodecasella elegans*, the only other species in the genus.

***Paraproto* sp.**

MCCAIN & GRAY, 1971: 127-128, figs. 9, 11. (*Paraproto condylata*).

GUERRA-GARCÍA & COLEMAN, 2001: 2-3, figs. 4-8. (*Paraproto condylata*)

Not HASWELL, 1885a: 993-995, pl. 48: figs 1-4. (*Proto condylata*).

Not MAYER, 1903: 25, pl. 1: fig. 10, pl. 6: fig. 20. (*Paraproto condylata*).

Distribution:

W

South Shetland Islands: South of Elephant Island ("Scotia Ridge"), *Eltanin* 12, sta; 1003, 62°41'S 054°43'W, 210-221 m (MC&G 71); *Polarstern* ANT XIV/2, sta. 004, 61°8.80'S 056°3.70'W, 161 m; sta. 130, 61°13.70'S 055°58.10'W, 146 m (GG&C 01).

Depth range:

146-221 m.

Ecology:

Unknown.

Remarks:

Paraproto condylata was originally described from Australia by HASWELL (1885a). Later, MAYER (1903) illustrated *Paraproto condylata* on the basis of HASWELL's material. The type specimen of *Paraproto condylata* was thought to be deposited in the Australian Museum (MCCAIN & STEINBERG 1970) but could not be found there (SPRINGTHORPE & LOWRY 1994). MCCAIN & GRAY (1971) reported the occurrence of "*Paraproto condylata*" from Antarctica. Recently, GUERRA-GARCÍA & COLEMAN (2001) redescribed and figured the Antarctic specimens of "*Paraproto condylata*" collected by the "Polarstern" cruise ANT XIV/2. Their description and figures in general agreed with MCCAIN & GRAY (1971) description.

Careful comparison of MAYER (1903)'s illustrations with those of MCCAIN & GRAY (1971) and GUERRA-GARCÍA & COLEMAN (2001) evidenced several morphological differences between the Australian and Antarctic specimens attributed to *P. condylata*. Although the length of the head (fused with pereonite 1) as illustrated by MAYER (1903, pl. 1, fig.

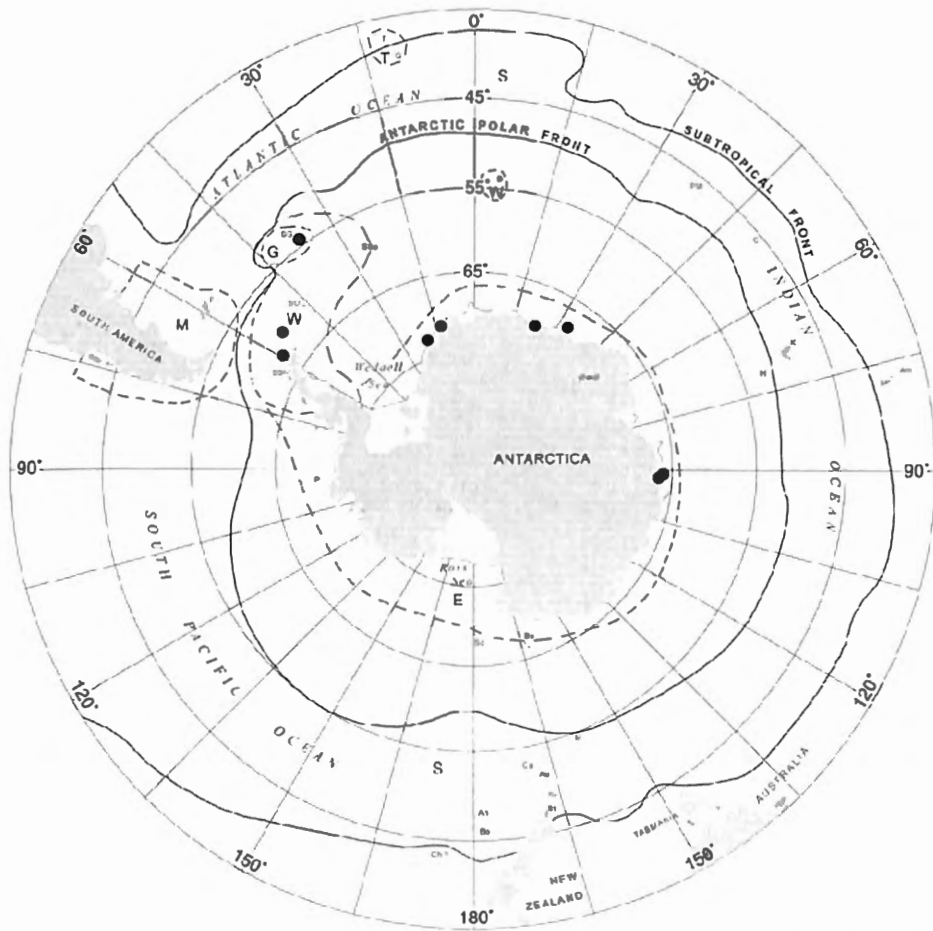
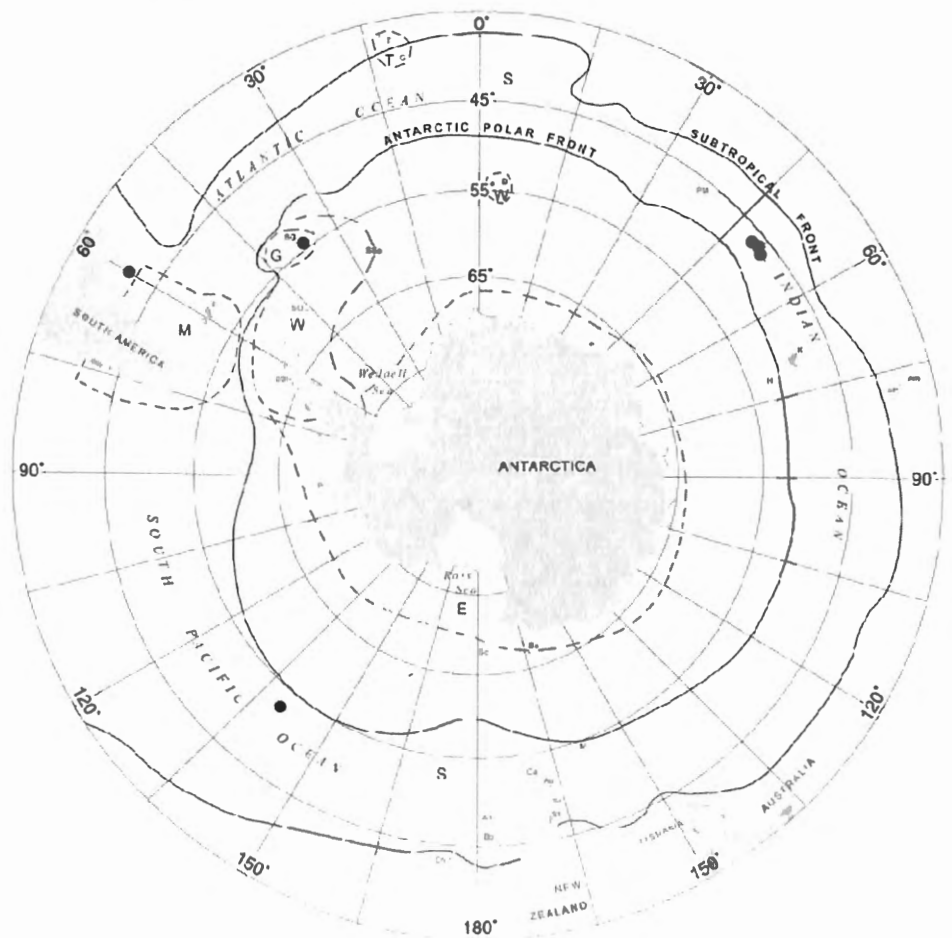


Fig. 20.
Distribution of *Dodecasella elegans*.

Fig. 21.
Distribution of
Dodecasella georgiana.



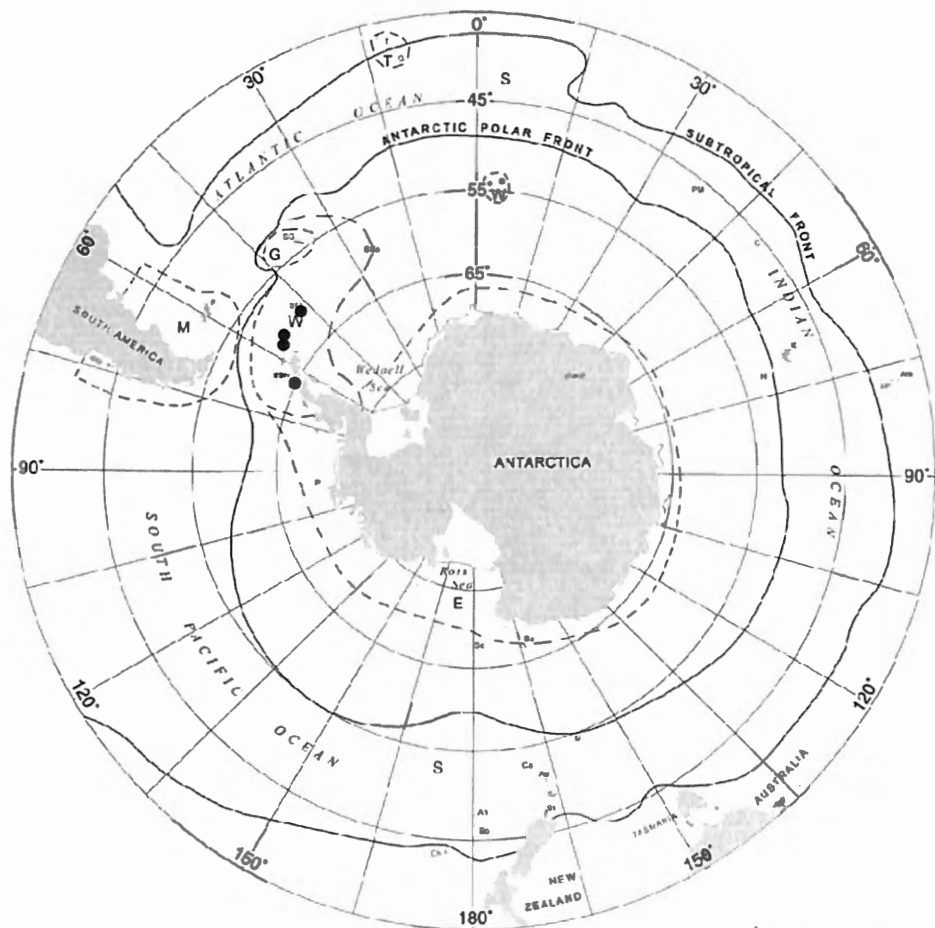


Fig. 22.
Distribution of
Pseudododecas bowmani.

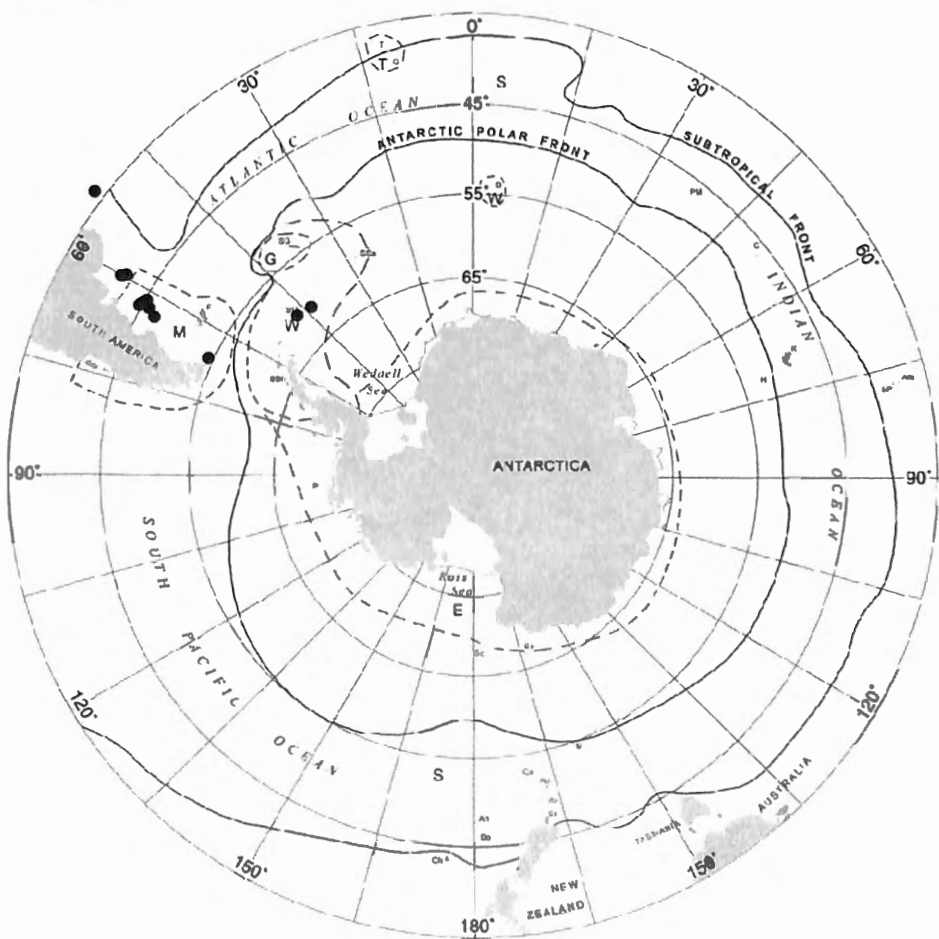


Fig. 23.
Distribution of
Pseudoprotomima hedgpethi.

10) is subequal to pereonites 2, 3, or 4, the head of the Antarctic specimens described by MCCAIN & GRAY (1971) and GUERRA-GARCÍA & COLEMAN (2001) is much longer, nearly twice the length of pereonite 3 or 4. According to HASWELL (1885a) and MAYER (1903) the gnathopod 2 propodus possesses a distal round projection, while the Antarctic specimens described by MCCAIN & GRAY (1971) and GUERRA-GARCÍA & COLEMAN (2001) lacked this projection. In addition, the insertion of the gills of pereonites 3 and 4 seems to be differently located: on fig. 4 of GUERRA-GARCÍA & COLEMAN (2001) the gills are clearly shown inserted at the same level but outside of the corresponding pereopods (which seems to be a misinterpretation) while in MAYER (1903, pl. 1, fig. 10), the gill insertion on pereonite 4 is clearly located slightly posterior to but in the same plane as the insertion of the corresponding pereopod. This character is unclear in fig. 11a of McCain & Gray (1971).

The above differences thus indicate that the Antarctic "*Paraproto condylata*" reported by MCCAIN & GRAY (1971) and GUERRA-GARCÍA & COLEMAN (2001) differs from the typical *Paraproto condylata* from Australia described by HASWELL (1885a) and MAYER (1903). The Antarctic "*Paraproto condylata*" specimens quite probably belong to a new species (under description) treated in this catalogue as *Paraproto* sp.

Pseudododecas bowmani MCCAIN & GRAY, 1971
(Fig. 22)

MCCAIN & GRAY, 1971: 131-133, figs. 2, 14.

ARNAUD, 1974: 593. (eco).

LAUBITZ, 1992: 35, fig. 4.

GUERRA-GARCÍA & COLEMAN, 2001: 3-4, figs. 9-13.

Distribution: W (Ba)

South Shetland Islands: *Eltanin* 12, sta. 997, 61°44'S 055°56'W, 769 m (MC&G 71); English Strait [62°27'S 059°38'W], between Roberts and Greenwich Islands, 325 m (DRL 92); *Polarstern* XIV/2, sta. 164, 62°8.30'S 057°59.70'W, 467 m; *Polarstern* XIV/2, sta. 176, 65°54.50'S 067°48.10'W, 445 m (GG&C 01).

Type-locality:

South Shetland Islands: 61°44'S 055°56'W, 769 m (MC&G 71).

Depth range:

325-769 m.

Ecology:

Unknown.

Type material location:

USNM, Washington.

Pseudoprotomima hedgpethi MCCAIN & GRAY, 1971
(Fig. 23)

MCCAIN & GRAY, 1971: 133-135, figs. 9, 15.

DE BROYER & RAUSCHERT, 1999: 287.

Distribution:

W + M + (Ba+)

Magellan Area: *Vema* 14, sta. 5, 45°51'S 061°52'W, 107 m; sta. 6, 46°47.7'S 062°47'W, 105 m; sta. 14, 54°23'S 065°35'W, 75 m; *Vema* 17, sta. 74, 41°27'S 059°33'W, 71 m; sta. 75, 41°41'S 059°19'W, 82 m; sta. 76, 41°57'S 059°03'W, 81 m; sta. 88, 45°11'S 060°55'W, 110 m; sta. 89, 45°02'S 061°18'W, 102 m; sta. 90, 44°53'S 061°43'W, 99 m; sta. 91, 44°45'S 062°11'W, 98 m; sta. 102, 34°25'S 052°19'W, 73 m (MC&G 71).

South Orkney Islands: *Eltanin* 12, sta. 1082, 60°50'S 042°55'W, 293-311 m; sta. 1084, 60°22'S 046°50'W, 293-403 m (MC&G 71).

Type-locality:

Magellan Area: *Vema* 17, sta. 75, 41°41'S 059°19'W, 82 m (MC&G 71).

Depth range:

71-403 m.

Extrinsic distribution:

South West Atlantic, off Uruguay: *Vema* 17, sta. 102: 34°25'S 052°19'W, 73 m (MC&G 71).

Extrinsic depth range:

73 m.

Ecology:

Unknown.

Type material location:

AMNH, New York. USNM, Washington.

Family CYAMIDAE RAFINESQUE, 1815

Cyamus balaenopterae K.H. BARNARD, 1931

BARNARD K.H., 1931: 430.

BARNARD K.H., 1932: 309-310, fig. 171.

GRUNER, 1975: 81. (syn).

GRUNER & VLASOVA, 1982: 159-160.

DAILEY & VOGELBEIN, 1991: 357, 359.

MARTIN & HEYNING, 1999: 27.

MARGOLIS, McDONALD & BOUSFIELD, 2000: 80-82, fig. 9. (*Cyamus* (*Paracyamus*) *balaenopterae*).

Host(s):

Balaenoptera acutorostrata Lacépède, 1804 (minke whale; northern and southern hemispheres).

Balaenoptera musculus (Linnaeus, 1758) (blue whale; north-ern and southern hemispheres).

Balaenoptera physalus (Linnaeus, 1758) (fin whale; northern and southern hemispheres).

Distribution in the southern hemisphere: S.Oc.++

Southern Ocean: in the Antarctic, no loc., on *B. physalus* (Be&V 82); In the Antarctic, no loc., on *B. acutorostrata* (VVA 89); Indian sector: Wilkes quadrant, 61°55'S 106°21'E; 61°43'S 110°07'E; Pacific sector, Amundsen quadrant: 70°07'S 113°55'W; 70°20'S 114°21'W; 69°58'S 108°15'W, on *B. acutorostrata* (D&V 91).

Other localities: Australia, on *B. physalus* (Be&V 82).

South Africa: Saldanha Bay and Durban, from *B. musculus* and *B. physalus* (KHB 31).

Type-locality:

South Africa: Saldanha Bay and Durban, from *Balaenoptera musculus* and *B. physalus* (KHB 31).

Type material location:

NHM, London.

***Cyamus boopis* LÜTKEN, 1870**

LÜTKEN, 1870: 280.

BARNARD K.H., 1932: 312. (*Paracyamus boopis*).

MARGOLIS, 1955: 124-127, figs. 7-12.

LEUNG, 1965: 134.

GRUNER, 1975: 81-82. (syn).

GRIFFITHS, 1974b: 257.

GRIFFITHS, 1975: 176.

GRUNER & VLASOVA, 1982: 157-160.

SEDLAK-WEINSTEIN, 1991: 95-96, pl.1: fig. 3, pl. 2: fig. 6, pl. 4: fig. 11, pl. 5: fig. 16.

MARTIN & HEYNING, 1999: 27.

MARGOLIS, McDONALD & BOUSFIELD, 2000: 79-80, fig. 8. (*Cyamus (Paracyamus) boopis*).

ALONSO DE PINA & GIUFFRA, 2003: 55-59, figs 90-119. (*Cyamus (Paracyamus) boopis*)

Hosts:

Megaptera novaeangliae (Borowski, 1781) (humpback whale; northern and southern hemispheres).

Physeter catodon Linnaeus, 1758 (sperm whale; northern and southern hemispheres).

Unidentified New Zealand whale (SEDLAK-WEINSTEIN 1991).

Unidentified south Australian whale (SEDLAK-WEINSTEIN 1991).

Distribution in the southern hemisphere: S.Oc. ++

Southern Ocean: Antarctic, no loc., on *M. novaeangliae* (YML 65); on *P. catodon* (Be&V 82).

South Georgia: on *M. novaeangliae* (KHB 32).

South Shetland Islands: on *M. novaeangliae* (KHB 32).

Between South Orkneys and South Georgia: on *M. novaeangliae* (A&G 03).

Other localities: South Africa, on *M. novaeangliae*; New Zealand, Australia, on unidentified whales (Be&V 82), (ESW 91); Peru (A&G 03).

Type-locality:

West Greenland (HEG 75).

Type material location:

ZMUC, Copenhagen. MNHN, Paris.

***Cyamus catodontis* MARGOLIS, 1954**

MARGOLIS, 1954: 320-324., pls. 1-2

BUZETA, 1963: 129-132, pl.1: figs. 1-8, pl. 2. (*Cyamus bahamondei*).

LEUNG, 1965: 134.

GRUNER, 1975: 82-83. (syn).

GRUNER, 1975: 80-81. (syn). (*Cyamus bahamondei*).

GRUNER & VLASOVA, 1982: 157-158.

GRUNER & VLASOVA, 1982: 157-160. (*Cyamus bahamondei*).

MARTIN & HEYNING, 1999: 27.

MARTIN & HEYNING, 1999: 27. (*Cyamus bahamondei*).

MARGOLIS, McDONALD & BOUSFIELD, 2000: 82-84, fig. 10. (*Cyamus (Mesocyamus) catodontis*).

Host(s):

Physeter catodon Linnaeus, 1758 (sperm whale, northern and southern hemispheres).

Balaenoptera acutorostrata Lacépède, 1804 (minke whale; northern and southern hemisphere).

Balaenoptera musculus (Linnaeus, 1758) (blue whale; north-ern and southern hemisphere).

Balaenoptera physalus (Linnaeus, 1758) (fin whale; north-ern and southern hemisphere).

Distribution in the southern hemisphere: S.Oc. ++

Southern Ocean: Antarctic, no loc.; Weddell Sea, 67°12'S 020°32'W; Atlantic sector, Maud quadrant: 55°04'S 017°04'E; 54°40'S 025°15'E; 57°20'S 017°35'E; Pacific sector, Bellingshausen quadrant: 67°50'S 082°40'W; 66°35'S 078°46'W; 63°43'S 066°40'W; 60°29'S 053°50'W, on *P. catodon* (YML 65), (Be&V 82); no loc., on *B. acutorostrata* (Be&V 82).

Other localities: South Africa, South Australia, on *P. catodon* (Be&V 82). Chile, Iquique, 20°17'S 070°09'W, approximately 100 miles far from the coast on *P. catodon*; Chile, Talcahuano, 36°45'S 073°12'W, on *P. catodon* (RB 63).

Type-locality:

Canada: off British Columbia, Coal Harbour, from *P. catodon* (LM 54).

Type material location:

CMN, Ottawa. MNHN, Santiago (*Cyamus bahamondei*).

Remarks:

Type material of *C. bahamondei* has recently been examined by T. Haney (Los Angeles) who came to the conclusion that *C. bahamondei* is a junior synonym of *C. catodontis* (Todd Haney pers. com.).

***Cyamus erraticus* ROUSSEL DE VAUZÈME, 1834**

ROUSSEL DE VAUZÈME, 1834: 259, pl. 8: figs. 22-23.

CHEVREUX, 1913c: 183-184, fig. 62.

STEPHENSON, 1947: 80.

MARGOLIS, 1955: 123-124, fig. 1-6.

GRUNER, 1975: 84-85. (syn).

GRIFFITHS, 1974b: 257.

GRIFFITHS, 1975: 176.

GRUNER & VLASOVA, 1982: 159-160.

MARTIN & HEYNING, 1999: 27.

MARGOLIS, McDONALD & BOUSFIELD, 2000: 75-76, fig. 6.

(*Cyamus (Cyamus) erraticus*).

ALONSO DE PINA & GIUFFRA, 2003: 41-46, figs 1-35, 119.

(*Cyamus (Cyamus) erraticus*).

Host(s):

Eubalaena australis (Desmoulins, 1822) (southern right whale; southern hemisphere).

Eubalaena glacialis (Muller, 1776) (northern right whale; northern hemisphere).

Megaptera novaeangliae (Borowski, 1781) (humpback whale, northern and southern hemisphere).

Distribution in the southern hemisphere: S.Oc. ++

Southern Ocean: Southern Atlantic waters, near Tristan da Cunha and Falkland Islands, on *E. australis* (HEG 75).

Antarctic, no loc., on *E. australis* (Be&V 82); Atlantic sector: on unidentified whales (A&G 03).

South Georgia: on *Balaena sp.* (KS 47); on unidentified whale (A&G 03).

South Shetland Islands: Deception Island, on *M. novaeangliae*; Yankee Harbour, on *M. novaeangliae* (EC 13c).

Other localities: New Zealand, on *E. australis* (Be&V 82). Chile, Peninsula de Tumbes, Concepcion. on unidentified whale (A&G 03). South Africa (A&G 03).

Type-locality:

Found on *Eubalaena australis* in the Southern Atlantic waters, near Tristan da Cunha and Falkland Islands (HEG 75).

Type material location:

Missing in MNHN, Paris; probably lost.

Cyamus gracilis ROUSSEL DE VAUZÈME, 1834

ROUSSEL DE VAUZÈME, 1834: 259, pl. 8: figs. 24-25.

BARNARD K.H., 1932: 312-313. (*Paracyamus gracilis*).

LEUNG, 1965: 137.

GRUNER, 1975: 85. (*syn.*)

GRIFFITHS, 1975: 176.

GRUNER & VLASOVA, 1982: 159-160.

MARTIN & HEYNING, 1999: 27.

MARGOLIS, McDONALD & BOUSFIELD, 2000: 76-78, fig. 7. (*Cyamus (Cyamus) gracilis*).

ALONSO DE PINA & GIUFFRA, 2003: 47-51, figs 36-62, 119. (*Cyamus (Cyamus) gracilis*).

Host(s):

Eubalaena australis (Desmoulins, 1822) (southern right whale; southern hemisphere).

Eubalaena glacialis (Muller, 1776) (northern right whale; northern hemisphere).

Distribution in the southern hemisphere: S.Oc. ++

Southern Ocean: Antarctic, no loc., on *E. australis* (YML 65; Be&V 82); Atlantic sector: on unidentified whales (A&G 03).

South Georgia: on *E. australis* (KHB 32).

South Atlantic waters, near Tristan da Cunha and Falkland Islands, on *E. australis* (HEG 75).

Other localities: South America, South Africa, New Zealand, on *E. australis* (Be&V 82). Argentina: Rio Negro, playa de San Antonio Oeste: on *E. australis* (A&G 03).

Type-locality:

South Atlantic waters, near Tristan da Cunha and Falkland Islands, on *E. australis* (HEG 75).

Type material location:

Missing in MNHN, Paris; probably lost.

Cyamus ovalis ROUSSEL DE VAUZÈME, 1834

ROUSSEL DE VAUZÈME, 1834: 241-255, 259, pl. 8: figs. 1-21, pl. 9: fig. 19.

BARNARD, K.H., 1932: 307-309, fig. 170.

STEPHENSEN, 1947: 80.

GRUNER, 1975: 87-88. (*syn.*)

GRIFFITHS, 1975: 176.

GRUNER & VLASOVA, 1982: 159-160.

MARTIN & HEYNING, 1999: 28.

MARGOLIS, McDONALD & BOUSFIELD, 2000: 73, 74, 76, fig. 5. (*Cyamus (Cyamus) ovalis*).

ALONSO DE PINA & GIUFFRA, 2003: 51-55, figs 63-89, 119. (*Cyamus (Cyamus) ovalis*).

Host(s):

Eubalaena australis (Desmoulins, 1822) (southern right whale; southern hemisphere).

Eubalaena glacialis (Muller, 1776) (northern right whale; northern hemisphere).

Physeter catodon Linnaeus, 1758 (sperm whale, northern and southern hemispheres).

Distribution in the southern hemisphere: S.Oc. ++

Southern Ocean: South Atlantic waters, near Tristan da Cunha and Falkland Islands (HEG 75).

South Georgia: on *E. australis* (KHB 32); on *Balaena sp.* (KS 47).

Other localities: Pacific coast of South America, on *P. catodon* (Be&V 82). Argentina: Rio Negro, playa de San Antonio Oeste: on *E. australis* (A&G 03).

Type-locality:

South Atlantic waters, near Tristan da Cunha and Falkland Islands (HEG 75).

Type material location:

MNHN, Paris.

Isocyamus antarcticensis VLASOVA in GRUNER & VLASOVA, 1982

GRUNER & VLASOVA, 1982: 152-157, figs. 1-2.

KUROCHKIN, 1988: pp.

SEDLAK-WEINSTEIN, 1992: 937.

MARTIN & HEYNING, 1999: 27.

Host(s):

Orcinus orca (Linnaeus, 1758) (killer whale; northern and southern hemisphere)

Distribution in the southern hemisphere: S.Oc.

Southern Ocean: North Prydz Bay, 69°00'S 075°00'E (found on pectoral fin and area of umbilicus of *O. orca*) (Be&V 82).

Oates Coast: Balleny Islands, 66°55'S 163°20'E (found on pectoral fin and area of umbilicus of *O. orca*) (Be&V 82).

Other localities: no other record.

Type-localities:

Southern Ocean: North Prydz Bay, 69°00'S 075°00'E (found on pectoral fin and area of umbilicus of *Orcinus orca*) (Be&V 82).

Oates Coast: Balleny Islands, 66°55'S 163°20'E (found on pectoral fin and area of umbilicus of *Orcinus orca*) (Be&V 82).

Type material location:

MGU, Moscow. (not found, T. Haney pers. com.).

Discussion**BATHYMETRIC DISTRIBUTION**

Among about 350 species of benthic caprellid species known in the world, 70 have been reported below 200 m, most of them in polar and subpolar regions. From these 70 species, 13 species (almost 18.5%) are distributed in the Southern Ocean.

Most of the Southern Ocean caprellids have a wide bathymetric distribution. For example, *Dodecasella elegans* has been found from 68 to 2894 m deep, *Aeginoides gaussi* from 20 to 1501 meters, *Caprellinoides mayeri* from 0 to 1153 m, *Caprellinoides tristanensis* from 10 to 1245 m and *Dodecas elongata* from 24 to 930 m deep. The highest number of species is found between 0 and 200 meters in the sub-Antarctic waters whereas in the Antarctic it occurs between 35 and 500 meters deep (Fig. 24). No caprellid species was known at depths greater than 2000 m in the Southern Ocean before the record of *Dodecasella elegans* by the R.V. *Polarstern* ANDEEP I cruise (DE BROYER *et al.* 2003).

Only four species are restricted to very shallow waters (less than 35 m deep): *Caprella manningi*, *Pseudaeginella campbellensis* and *Triantella solitaria* occurring in the sub-Antarctic region and *Caprellinoides antarcticus* (here treated under *Caprellinoides tristanensis*) recorded by Takeuchi & Watanabe (2002) from a depth of 12 m in Lützow-Holm Bay, East Antarctica. The reduction or absence of caprellid species at littoral depths in the Antarctic is probably due to the coastal ice impacts as often suggested to explain the impoverishment of the Antarctic littoral communities (see e.g.

JAZDZEWSKI *et al.* 2001). By comparison, in the Mediterranean, most caprellids occur in the 0-35 m depth zone (BELLAN-SANTINI 1999). On the other hand, only two species are restricted exclusively to waters deeper than 200 meters in the Southern Ocean: *Pseudododecas bowmani* and *Protella trilobata*.

ZOOGEOGRAPHICAL REMARKS

The benthic caprellid fauna of the Southern Ocean comprises, so far, 23 species (two unidentified species, *Caprella* sp. and *Eupariambus* sp., have not been taken into account in this analysis).

Of these 23 species, 14 can be considered endemic of the Southern Ocean (*s.l.*) representing almost 61%. Ten species have been recorded in the Antarctic region and three of them, *Caprellinoides singularis*, *Dodecasella elegans* and *Pseudododecas bowmani* are endemic to the Antarctic waters (30 % endemic). Nineteen species have been found in the sub-Antarctic region, with 6 endemic species (31.6 %): *Caprella manningi*, *Caprellaporema subantarctica*, *Deutella vema*, *Protella trilobata*, *Protellopsis kergueleni* and *Pseudaeginella campbellensis*. Endemicity at the genus level attains 43.7 % for the whole Southern Ocean, 14.3 % for the Antarctic and also 14.3 % for the sub-Antarctic region (Table 2).

Different distribution patterns can be detected among the Southern Ocean caprellid fauna but the small number of species and often the limited records do not allow much generalization in terms of zoogeography.

Among the species distributed in the sub-Antarctic waters, there is a small group of species (*Caprella manningi*, *Caprellaporema subantarctica* and *Pseudaeginella campbellensis*) which have been exclusively reported so far from the sub-Antarctic islands of New Zealand. On the other hand there is another group of species such as *Deutella vema*, *Protella trilobata* and *Mayerella magellanica* which have been found in the Magellan region but not in the sub-Antarctic islands. *Protellopsis kergueleni* has been found, so far, only in Heard and Kerguelen Islands, far away from the sub-Antarctic islands of New Zealand.

Although more records are necessary to generalize the distribution patterns, it seems that the caprellid fauna in the sub-Antarctic region is different in each province, showing endemicity at province scale.

Although a considerable number of samples collected from Auckland, Antipodes, Campbell, Macquarie and Snares Islands have been recently studied (GUERRA-GARCIA 2003a), some species widely distributed in the Southern Ocean such as *Aeginoides gaussi*, *Caprellinoides tristanensis* and

Table 2. Zoogeographical distribution of the benthic Caprellidea of the Southern Ocean.

	Species		Genera	
	N spp. (endemic)	% endemic spp.	N gen. (endemic)	% endemic gen.
Antarctic Region	10 (3)	30	7 (1)	14,3
Sub-Antarctic Region	19 (6)	31,6	14 (2)	14,3
Southern Ocean (<i>s.l.</i>)	23 (14)	60,9	16 (7)	43,7

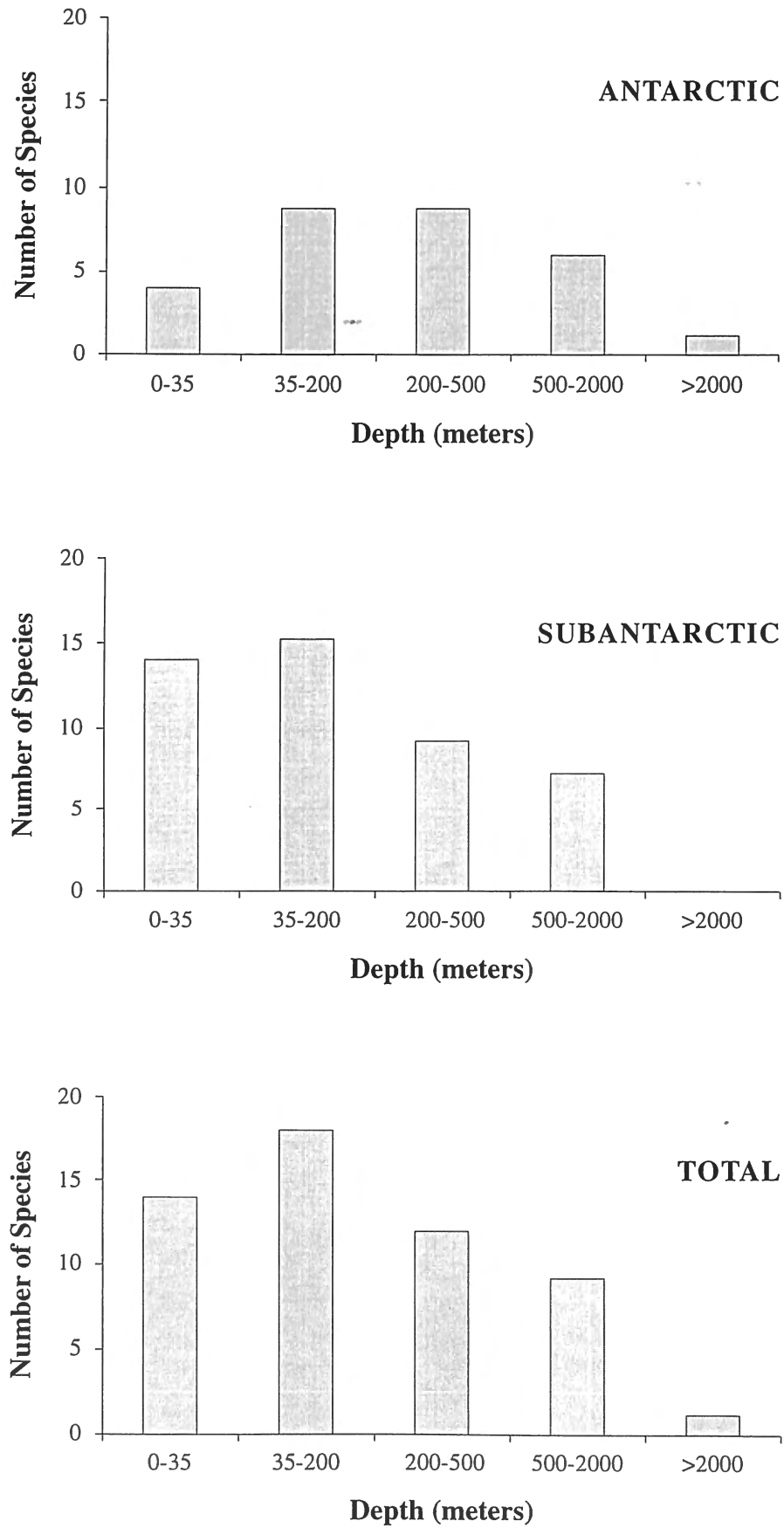


Fig.24. Bathymetric distribution of Southern Ocean Caprellidae.

Dodecas elongata have not been found in this group of sub-Antarctic islands. The two latter species have been recently recorded from Ile Amsterdam (LAUBITZ 1995) (at depths between 165 and 2010 m) enlarging their distribution north to the Subtropical Front Zone. They are nevertheless considered endemic to the Southern Ocean because of their general distribution in the sub-Antarctic and Antarctic areas.

ECOLOGY

Habitat use and substrate preferences are unknown for most of the benthic Caprellidae from the Southern Ocean. Taking into account that the majority of samples collected in the Antarctic were collected by dredges and trawls, it is difficult to determine precisely the substrate on which the caprellids were living on the bottom. More precise ecological studies are needed to characterize the substrate preferences of the Southern Ocean Caprellidae, focusing in particular for soft bottom species on sediment data (organic matter content, granulometry). So far, only four species found in the Southern Ocean (*Caprellina longicollis*, *Caprella equilibra*, *C. penantis* and *Pseudaeginella tristanensis*) seem to have no substrate preferences having been collected from many different substrates such as algae, sponges, hydroids, or sediments (see references under ecology in the catalogue section above). Other species, such as *Dodecas elongata*, *Dodecasella elegans* and *Mayerella magellanica* seem to live preferably on mud and/or sandy bottoms. *Caprella unguilina* has the pereopods adapted to live on the mouthparts of lithodid crabs and *Caprella manningi* have been found on sea stars of the genus *Calvasterias* but also on other substrates such as sponges and algae, always in very shallow waters.

BEHAVIOUR

Feeding strategies and clinging behaviour of the Southern Ocean Caprellidae have not been investigated yet. Analysis of some pictures of *Paraproto* cf. *condylata* (taken by Dr. C.O. COLEMAN, Berlin) and *Aeginoides gaussi* (taken by Dr P. MARTIN, Brussels) showed the living specimens in upright position, but without systematic observations in aquaria, it cannot be concluded that this is the usual posture taken by these caprellid species. Studies similar to those conducted by TAKEUCHI & HIRANO (1995) and GUERRA-GARCÍA *et al.* (2002), dealing with the clinging behaviour of the Caprellidae from Japanese and Mediterranean waters respectively, should be carried out for Antarctic and sub-Antarctic caprellids. As TAKEUCHI (1993) pointed out, behavioural and ecological studies, especially in Phtisicidae, are essential to know the function and significance of their six-articulate pereopods 3 and 4.

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